


**STATE OF UTAH**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 3

AMENDED REPORT ☐

<b>APPLICATION FOR PERMIT TO DRILL</b>						<b>1. WELL NAME and NUMBER</b> NBU 1021-30D4BS				
<b>2. TYPE OF WORK</b> DRILL NEW WELL <input checked="" type="checkbox"/> REENTER P&A WELL <input type="checkbox"/> DEEPEN WELL <input type="checkbox"/>						<b>3. FIELD OR WILDCAT</b> NATURAL BUTTES				
<b>4. TYPE OF WELL</b> Gas Well Coalbed Methane Well: NO						<b>5. UNIT or COMMUNITIZATION AGREEMENT NAME</b> NATURAL BUTTES				
<b>6. NAME OF OPERATOR</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.						<b>7. OPERATOR PHONE</b> 720 929-6515				
<b>8. ADDRESS OF OPERATOR</b> P.O. Box 173779, Denver, CO, 80217						<b>9. OPERATOR E-MAIL</b> julie.jacobson@anadarko.com				
<b>10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE)</b> ML 22793			<b>11. MINERAL OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>			<b>12. SURFACE OWNERSHIP</b> FEDERAL <input type="checkbox"/> INDIAN <input type="checkbox"/> STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>				
<b>13. NAME OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>14. SURFACE OWNER PHONE (if box 12 = 'fee')</b>				
<b>15. ADDRESS OF SURFACE OWNER (if box 12 = 'fee')</b>						<b>16. SURFACE OWNER E-MAIL (if box 12 = 'fee')</b>				
<b>17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')</b>			<b>18. INTEND TO COMMINGLE PRODUCTION FROM MULTIPLE FORMATIONS</b> YES <input checked="" type="checkbox"/> (Submit Commingling Application) NO <input type="checkbox"/>			<b>19. SLANT</b> VERTICAL <input type="checkbox"/> DIRECTIONAL <input checked="" type="checkbox"/> HORIZONTAL <input type="checkbox"/>				
<b>20. LOCATION OF WELL</b>		<b>FOOTAGES</b>		<b>QTR-QTR</b>	<b>SECTION</b>	<b>TOWNSHIP</b>	<b>RANGE</b>	<b>MERIDIAN</b>		
LOCATION AT SURFACE		1964 FNL 1950 FWL		SEnw	30	10.0 S	21.0 E	S		
Top of Uppermost Producing Zone		821 FNL 829 FWL		NWNw	30	10.0 S	21.0 E	S		
At Total Depth		821 FNL 829 FWL		NWNw	30	10.0 S	21.0 E	S		
<b>21. COUNTY</b> UINTAH			<b>22. DISTANCE TO NEAREST LEASE LINE (Feet)</b> 821			<b>23. NUMBER OF ACRES IN DRILLING UNIT</b> 644				
			<b>25. DISTANCE TO NEAREST WELL IN SAME POOL (Applied For Drilling or Completed)</b> 390			<b>26. PROPOSED DEPTH</b> MD: 9880 TVD: 9565				
<b>27. ELEVATION - GROUND LEVEL</b> 5266			<b>28. BOND NUMBER</b> 22013542			<b>29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE</b> Permit #43-8496				
<b>Hole, Casing, and Cement Information</b>										
<b>String</b>	<b>Hole Size</b>	<b>Casing Size</b>	<b>Length</b>	<b>Weight</b>	<b>Grade &amp; Thread</b>	<b>Max Mud Wt.</b>	<b>Cement</b>	<b>Sacks</b>	<b>Yield</b>	<b>Weight</b>
Surf	11	8.625	0 - 2170	28.0	J-55 LT&C	0.2	Type V	180	1.15	15.8
							Class G	270	1.15	15.8
Prod	7.875	4.5	0 - 9880	11.6	I-80 Buttruss	12.5	Premium Lite High Strength	280	3.38	11.0
							50/50 Poz	1160	1.31	14.3
<b>ATTACHMENTS</b>										
<b>VERIFY THE FOLLOWING ARE ATTACHED IN ACCORDANCE WITH THE UTAH OIL AND GAS CONSERVATION GENERAL RULES</b>										
<input checked="" type="checkbox"/> WELL PLAT OR MAP PREPARED BY LICENSED SURVEYOR OR ENGINEER					<input checked="" type="checkbox"/> COMPLETE DRILLING PLAN					
<input type="checkbox"/> AFFIDAVIT OF STATUS OF SURFACE OWNER AGREEMENT (IF FEE SURFACE)					<input type="checkbox"/> FORM 5. IF OPERATOR IS OTHER THAN THE LEASE OWNER					
<input checked="" type="checkbox"/> DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY DRILLED)					<input checked="" type="checkbox"/> TOPOGRAPHICAL MAP					
<b>NAME</b> Danielle Piernot			<b>TITLE</b> Regulatory Analyst			<b>PHONE</b> 720 929-6156				
<b>SIGNATURE</b>			<b>DATE</b> 03/11/2011			<b>EMAIL</b> danielle.piernot@anadarko.com				
<b>API NUMBER ASSIGNED</b> 43047515330000			<b>APPROVAL</b> <div style="text-align: center;">           Permit Manager       </div>							

**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1021-30D4BS**

Surface: 1964 FNL / 1950 FWL      SENW  
BHL: 821 FNL / 829 FWL      NWNW

Section 30 T10S R21E

Unitah County, Utah  
Mineral Lease: ST UT ML 22793

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

1. & 2. **Estimated Tops of Important Geologic Markers:**  
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1107	
Birds Nest	1374	Water
Mahogany	1715	Water
Wasatch	4351	Gas
Mesaverde	7386	Gas
MVU2	8321	Gas
MVL1	8876	Gas
TVD	9565	
TD	9880	

3. **Pressure Control Equipment** (Schematic Attached)

*Please refer to the attached Drilling Program*

4. **Proposed Casing & Cementing Program:**

*Please refer to the attached Drilling Program*

5. **Drilling Fluids Program:**

*Please refer to the attached Drilling Program*

6. **Evaluation Program:**

*Please refer to the attached Drilling Program*

7. **Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 9565' TVD, approximately equals  
6,313 psi 0.64 psi/ft = actual bottomhole gradient

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Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 4,004 psi (bottom hole pressure  
minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

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Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-  
(0.22 psi/ft-partial evac gradient x TVD of next csg point))

8. **Anticipated Starting Dates:**

*Drilling is planned to commence immediately upon approval of this application.*

9. **Variances:**

*Please refer to the attached Drilling Program.  
Onshore Order #2 – Air Drilling Variance*

*Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements  
associated with air drilling outlined in Onshore Order 2*

- *Blowout Prevention Equipment (BOPE) requirements;*
- *Mud program requirements; and*
- *Special drilling operation (surface equipment placement) requirements associated  
with air drilling.*

*This Standard Operating Practices addendum provides supporting information as to why KMG current  
air drilling practices for constructing the surface casing hole should be granted a variance to Onshore  
Order 2 air drilling requirements.*

*The reader should note that the air rig is used only to construct a stable surface casing hole through a  
historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to  
drill and construct the majority of the wellbore.*

*More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing  
hole in approximately 675 wells without incident of blow out or loss of life.*

**Background**

*In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the  
surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling  
operation does not drill through productive or over pressured formations in KMG field, but does  
penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome  
the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole  
for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the  
Bird's Nest.*

*Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.*

*The air rig is then mobilized to drill the surface casing hole by drilling a 11 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.*

*KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.*

#### ***Variance for BOPE Requirements***

*The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.*

#### ***Variance for Mud Material Requirements***

*Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.*

#### ***Variance for Special Drilling Operation (surface equipment placement) Requirements***

*Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.*

*Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.*

*Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and*

*on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.*

*Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.*

***Conclusion***

*The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.*

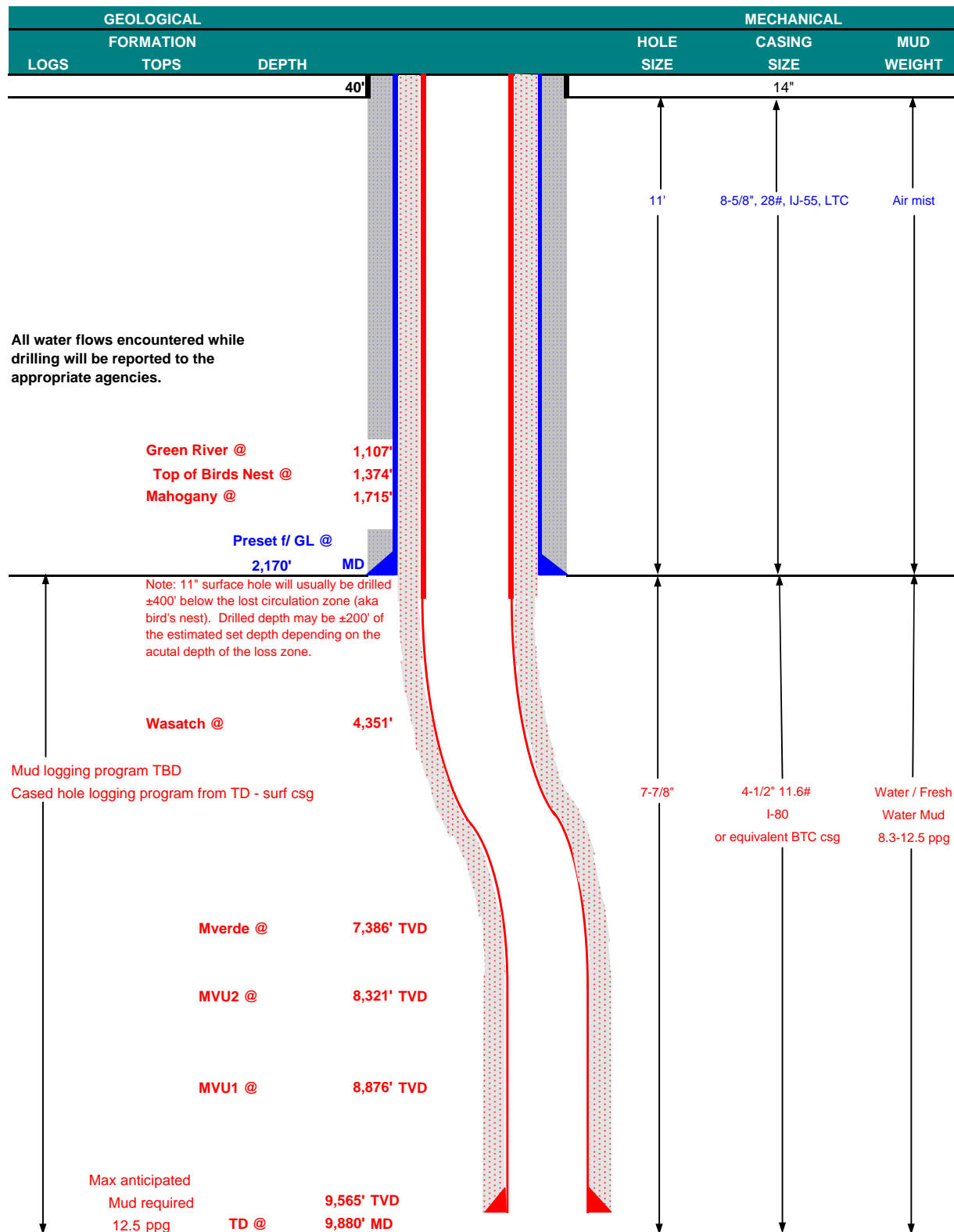
10. **Other Information:**

*Please refer to the attached Drilling Program.*



## KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME	KERR-McGEE OIL & GAS ONSHORE LP					DATE	February 10, 2011		
WELL NAME	NBU 1021-30D4BS					TD	9,565'	TVD	9,880' MD
FIELD	Natural Buttes		COUNTY	Uintah	STATE	Utah	FINISHED ELEVATION		5265.8
SURFACE LOCATION	SENW	1964 FNL	1950 FWL	Sec 30	T 10S	R 21E			
	Latitude: 39.920492		Longitude: -109.596514		NAD 27				
BTM HOLE LOCATION	NWNW	821 FNL	829 FWL	Sec 30	T 10S	R 21E			
	Latitude: 39.923631		Longitude: -109.60052		NAD 27				
OBJECTIVE ZONE(S)	Wasatch/Mesaverde								
ADDITIONAL INFO	Regulatory Agencies: UDOGM (Minerals), UDOGM (Surface), UDOGM Tri-County Health Dept.								





## KERR-McGEE OIL & GAS ONSHORE LP

### DRILLING PROGRAM

#### CASING PROGRAM

	SIZE	INTERVAL	WT.	GR.	CPLG.	DESIGN FACTORS		
						BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'				3,390	1,880	348,000
SURFACE	8-5/8"	0 to 2,170	28.00	IJ-55	LTC	2.49	1.85	5.67
						7,780	6,350	367,000
PRODUCTION	4-1/2"	0 to 9,880	11.60	I-80	BTC	1.11	1.02	3.96

#### Surface Casing:

(Burst Assumptions: TD = 12.5 ppg)

0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### Production casing:

(Burst Assumptions: Pressure test with 8.4ppg @ 7000 psi)

0.64 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

#### CEMENT PROGRAM

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
			+ 0.25 pps flocele				
Option 1							
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
			+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water to surface, option 2 will be utilized					
Option 2	LEAD	1,670'	65/35 Poz + 6% Gel + 10 pps gilsonite	160	35%	11.00	3.82
			+ 0.25 pps Flocele + 3% salt BWOW				
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
			+ 0.25 pps flocele				
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION	LEAD	3,850'	Premium Lite II +0.25 pps	280	10%	11.00	3.38
			celloflake + 5 pps gilsonite + 10% gel				
			+ 0.5% extender				
	TAIL	6,030'	50/50 Poz/G + 10% salt + 2% gel	1,160	10%	14.30	1.31
			+ 0.1% R-3				

\*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

\*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

#### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

#### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

#### DRILLING ENGINEER:

Nick Spence / Emile Goodwin

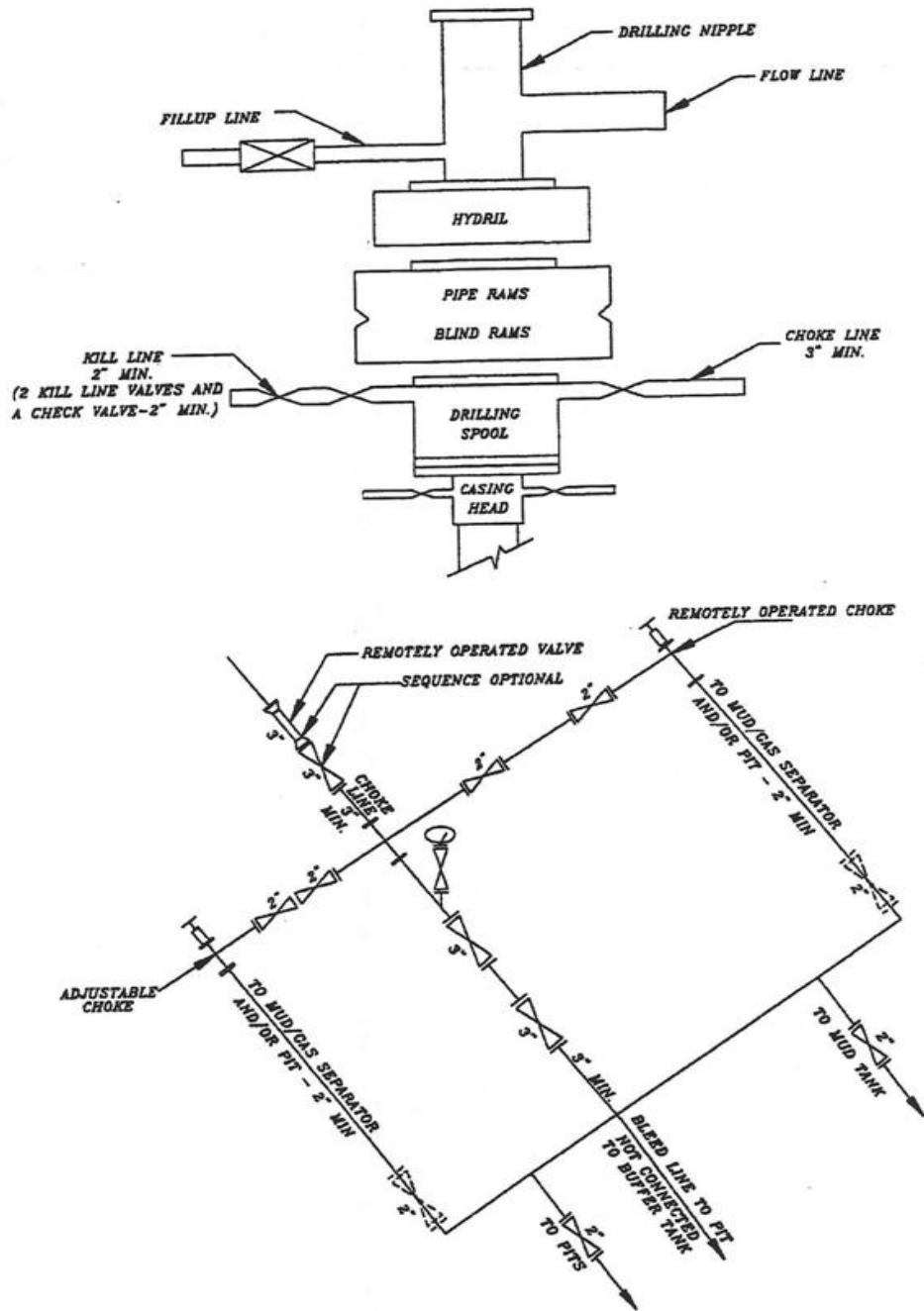
DATE:

#### DRILLING SUPERINTENDENT:

Kenny Gathings / Lovel Young

DATE:

EXHIBIT A  
NBU 1021-30D4BS



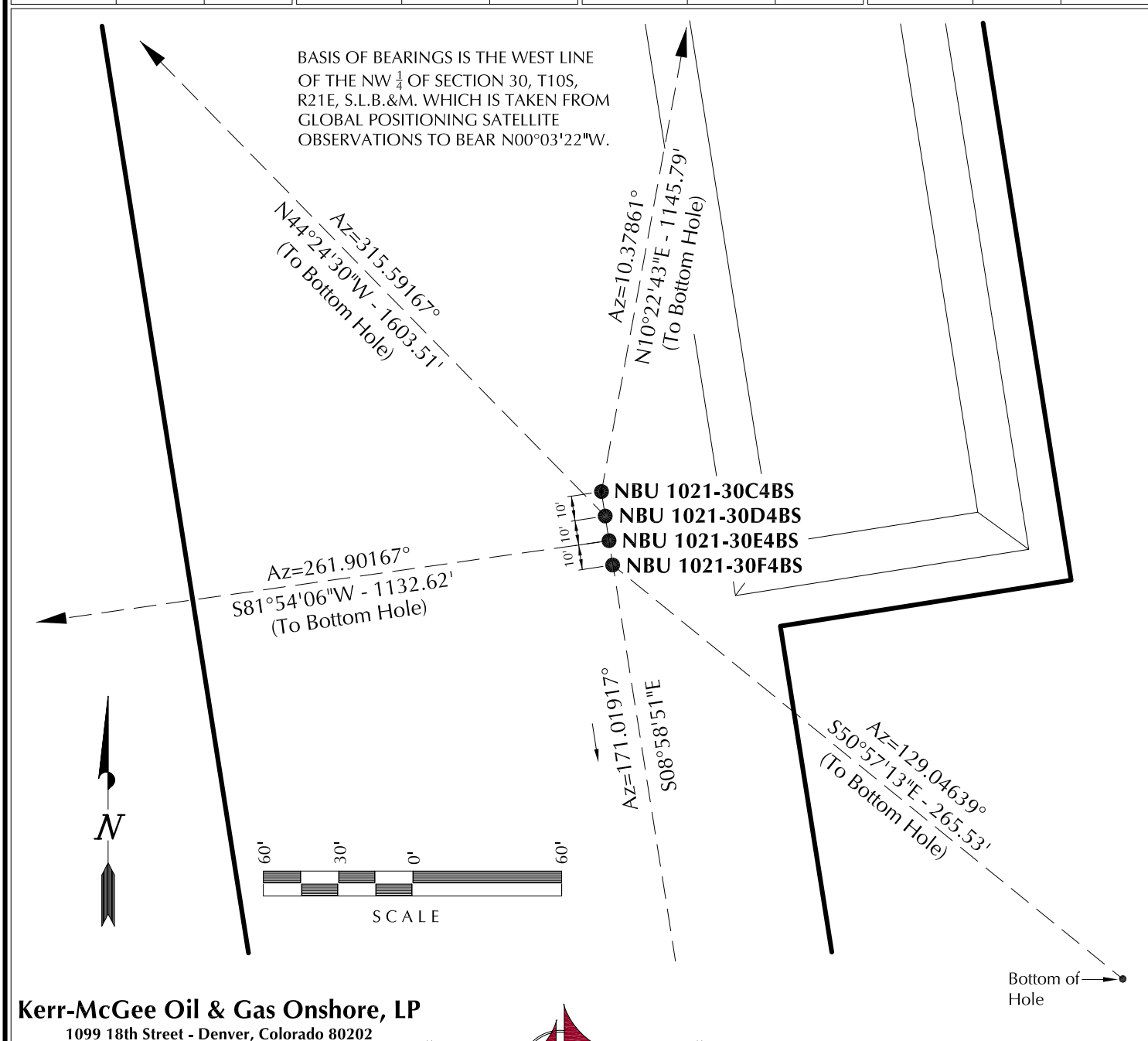
SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK

RECEIVED: May. 19, 2011

WELL NAME	SURFACE POSITION					BOTTOM HOLE				
	NAD83		NAD27		FOOTAGES	NAD83		NAD27		FOOTAGES
	LATITUDE	LONGITUDE	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	LATITUDE	LONGITUDE	
NBU 1021-30C4BS	39°55'13.744"	109°35'49.951"	39°55'13.869"	109°35'47.471"	1954' FNL	39°55'24.882"	109°35'47.324"	39°55'25.007"	109°35'44.844"	826' FNL
	39.920484°	109.597209°	39.920519°	109.596520°	1948' FWL	39.923578°	109.596479°	39.923613°	109.595790°	2156' FWL
NBU 1021-30D4BS	39°55'13.646"	109°35'49.931"	39°55'13.771"	109°35'47.451"	1964' FNL	39°55'24.946"	109°36'04.352"	39°55'25.072"	109°36'01.871"	821' FNL
	39.920457°	109.597203°	39.920492°	109.596514°	1950' FWL	39.923596°	109.601209°	39.923631°	109.600520°	829' FWL
NBU 1021-30E4BS	39°55'13.547"	109°35'49.911"	39°55'13.672"	109°35'47.432"	1973' FNL	39°55'11.954"	109°36'04.297"	39°55'12.079"	109°36'01.816"	2136' FNL
	39.920430°	109.597198°	39.920465°	109.596509°	1951' FWL	39.919987°	109.601194°	39.920022°	109.600505°	830' FWL
NBU 1021-30F4BS	39°55'13.450"	109°35'49.892"	39°55'13.575"	109°35'47.413"	1983' FNL	39°55'11.801"	109°35'47.243"	39°55'11.926"	109°35'44.763"	2150' FNL
	39.920403°	109.597192°	39.920438°	109.596504°	1953' FWL	39.919945°	109.596456°	39.919979°	109.595768°	2159' FWL

## RELATIVE COORDINATES - From Surface Position to Bottom Hole

WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST	WELL NAME	NORTH	EAST
NBU 1021-30C4BS	1,127.0'	206.4'	NBU 1021-30D4BS	1,145.5'	-1,122.1'	NBU 1021-30E4BS	-159.6'	-1,121.3'	NBU 1021-30F4BS	-167.3'	206.2'



**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1021-30F**

**WELL PAD INTERFERENCE PLAT**  
WELLS - NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH.



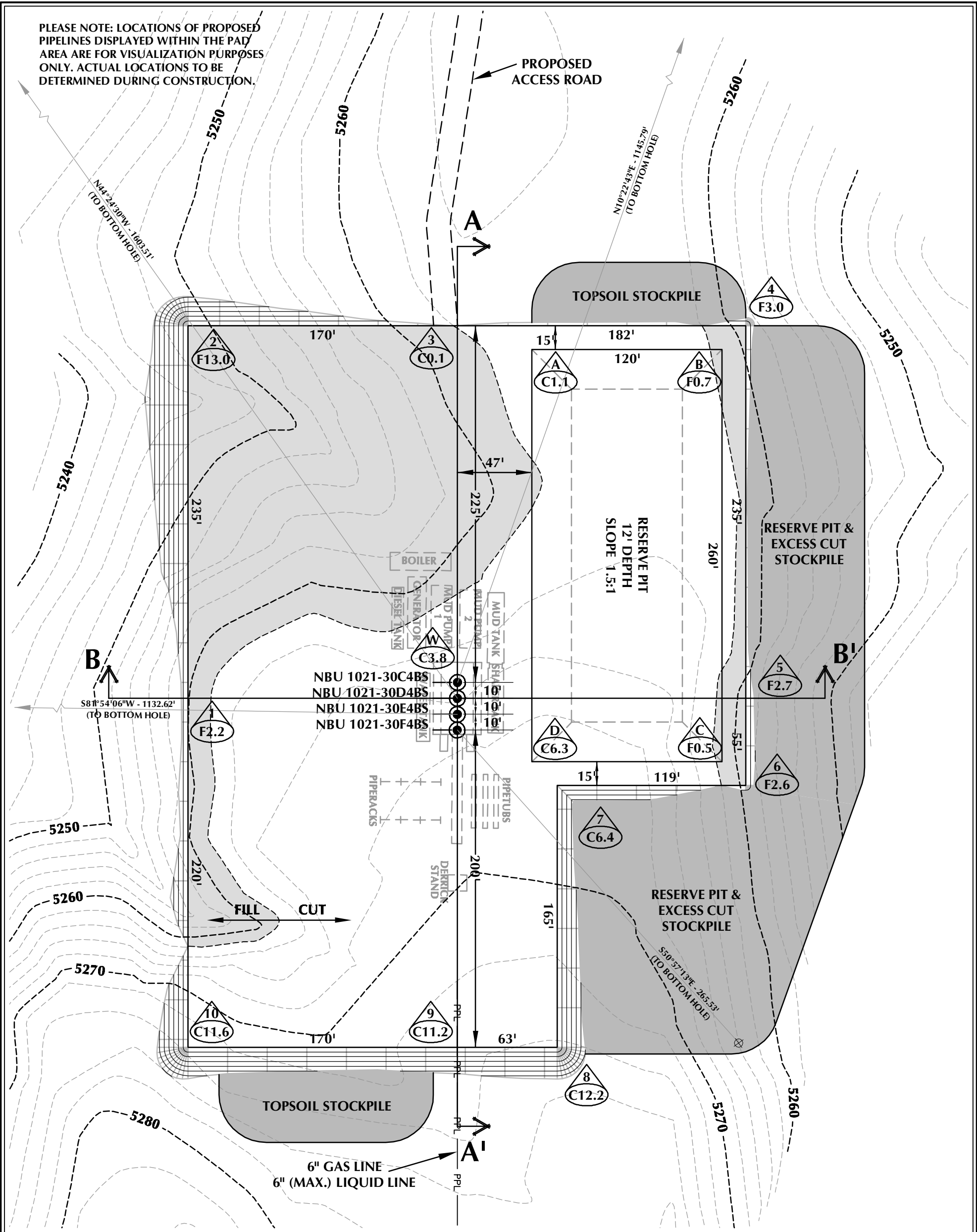
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**TIMBERLINE**

(435) 789-1365

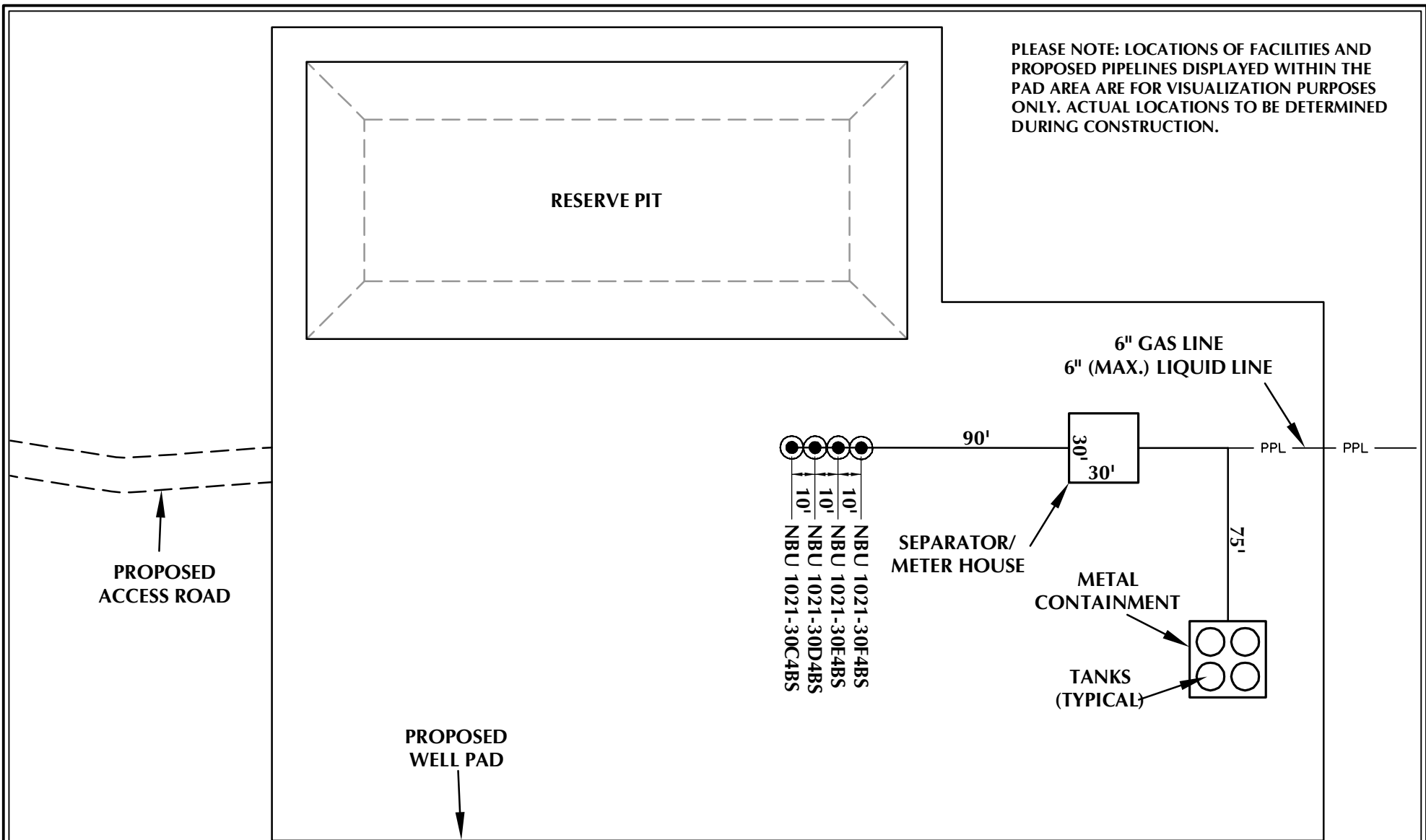
ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE SURVEYED: 10-27-10	SURVEYED BY: D.J.S.	SHEET NO: <b>5</b> 5 OF 16
DATE DRAWN: 11-10-10	DRAWN BY: B.M.	
SCALE: 1" = 60'	Date Last Revised: 12-14-10 M.W.W.	



WELL PAD - NBU 1021-30F DESIGN SUMMARY		WELL PAD LEGEND	
<p>EXISTING GRADE @ CENTER OF WELL PAD = 5265.8'</p> <p>FINISHED GRADE ELEVATION = 5262.0'</p> <p>CUT SLOPES = 1.5:1</p> <p>FILL SLOPES = 1.5:1</p> <p>TOTAL WELL PAD AREA = 3.60 ACRES</p> <p>TOTAL DAMAGE AREA = 6.28 ACRES</p> <p>SHRINKAGE FACTOR = 1.10</p> <p>SWELL FACTOR = 1.00</p> <p>Kerr-McGee Oil &amp; Gas Onshore, LP</p> <p>1099 18th Street - Denver, Colorado 80202</p>		<p>EXISTING WELL LOCATION</p> <p>PROPOSED WELL LOCATION</p> <p>PROPOSED BOTTOM HOLE LOCATION</p> <p>EXISTING CONTOURS (2' INTERVAL)</p> <p>PROPOSED CONTOURS (2' INTERVAL)</p> <p>PPL</p> <p>EPL</p> <p>EXISTING PIPELINE</p>	
<p>WELL PAD - NBU 1021-30F</p> <p>WELL PAD - LOCATION LAYOUT</p> <p>NBU 1021-30C4BS, NBU 1021-30D4BS,</p> <p>NBU 1021-30E4BS &amp; NBU 1021-30F4BS</p> <p>LOCATED IN SECTION 30, T10S, R21E,</p> <p>S.L.B.&amp;M., UINTAH COUNTY, UTAH</p>		<p>WELL PAD QUANTITIES</p> <p>TOTAL CUT FOR WELL PAD = 14,181 C.Y.</p> <p>TOTAL FILL FOR WELL PAD = 11,543 C.Y.</p> <p>TOPSOIL @ 6" DEPTH = 2,901 C.Y.</p> <p>EXCESS MATERIAL = 2,638 C.Y.</p> <p>RESERVE PIT QUANTITIES</p> <p>TOTAL CUT FOR RESERVE PIT</p> <p>+/- 11,020 C.Y.</p> <p>RESERVE PIT CAPACITY (2' OF FREEBOARD)</p> <p>+/- 42,290 BARRELS</p>	
<p>CONSULTING, LLC</p> <p>2155 North Main Street</p> <p>Sheridan, WY 82801</p> <p>Phone 307-674-0609</p> <p>Fax 307-674-0182</p>		<p>TIMBERLINE</p> <p>ENGINEERING &amp; LAND SURVEYING, INC.</p> <p>209 NORTH 300 WEST - VERNAL, UTAH 84078</p> <p>(435) 789-1365</p>	
<p>RECEIVED: May. 19, 2011</p>		<p>SCALE: 1"=60'</p> <p>DATE: 11/16/10</p> <p>SHEET NO: 6</p> <p>6 OF 16</p>	





**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1021-30F**

**WELL PAD - FACILITIES DIAGRAM**  
NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E  
S.L.B.&M., UINTAH COUNTY, UTAH



**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**WELL PAD LEGEND**

- EXISTING WELL LOCATION
- PROPOSED WELL LOCATION
- PPL — PROPOSED PIPELINE
- EPL — EXISTING PIPELINE



**HORIZONTAL** 0 30' 60' 1" = 60'

**TIMBERLINE**  
ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST • VERNAL, UTAH 84078

(435) 789-1365

Scale: 1"=60'

Date: 11/16/10

SHEET NO:

**8**

8 OF 16

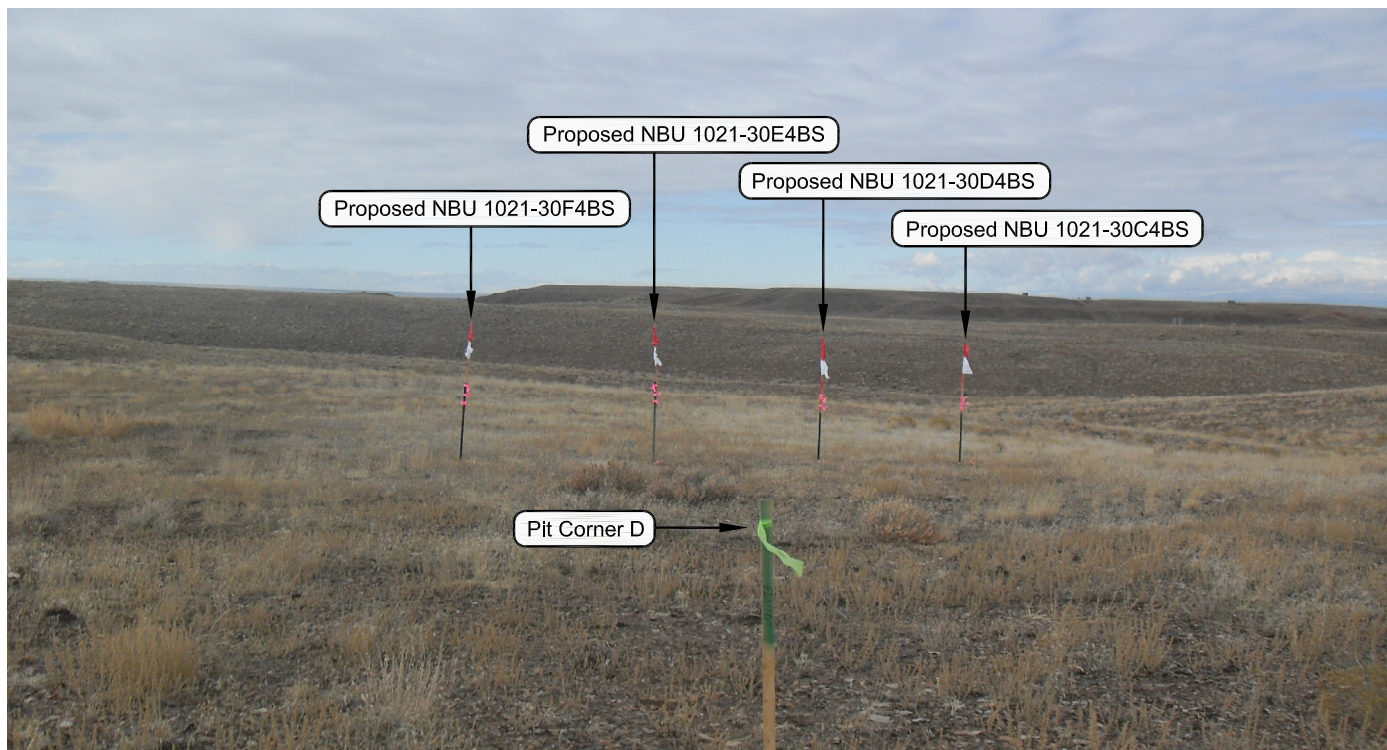


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

CAMERA ANGLE: NORTHWESTERLY



PHOTO VIEW: FROM BEGINNING OF PROPOSED ROAD

CAMERA ANGLE: SOUTHEASTERLY

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 1021-30F**

**LOCATION PHOTOS**

NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH.



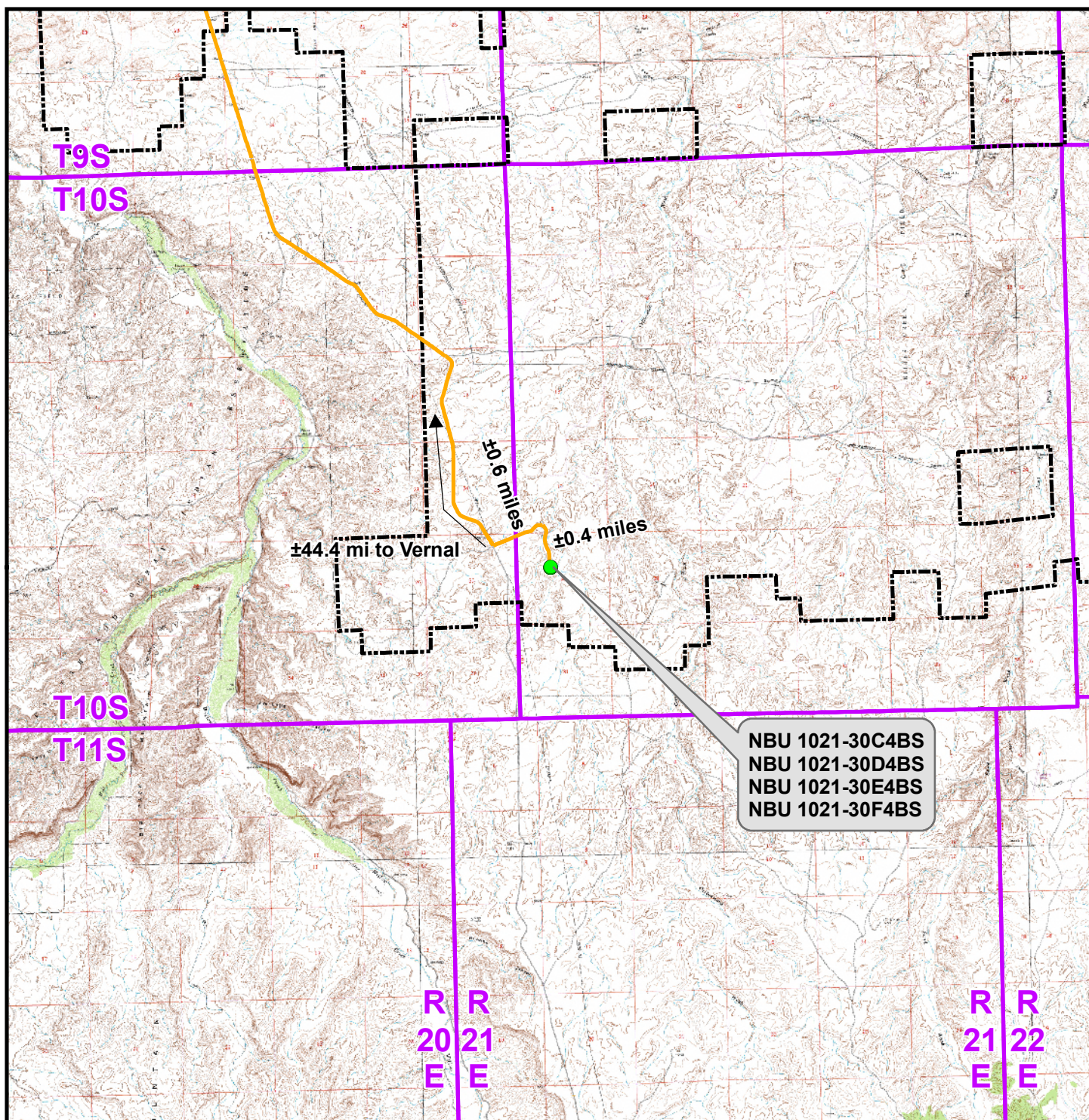
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan WY 82801  
Phone 307-674-0609  
Fax 307-674-0182

**TIMBERLINE**

(435) 789-1365

ENGINEERING & LAND SURVEYING, INC.  
209 NORTH 300 WEST - VERNAL, UTAH 84078

DATE PHOTOS TAKEN: 10-27-10	PHOTOS TAKEN BY: D.J.S.	SHEET NO:  <b>9</b> 9 OF 16
DATE DRAWN: 11-10-10	DRAWN BY: B.M.	
Date Last Revised:		



### Legend

- Proposed Well Location
- Natural Buttes Unit Boundary
- Access Route - Proposed

Distance From Well Pad - NBU 1021-30F To Unit Boundary: ±2,759ft

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

### WELL PAD - NBU 1021-30F

#### TOPO A

NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH



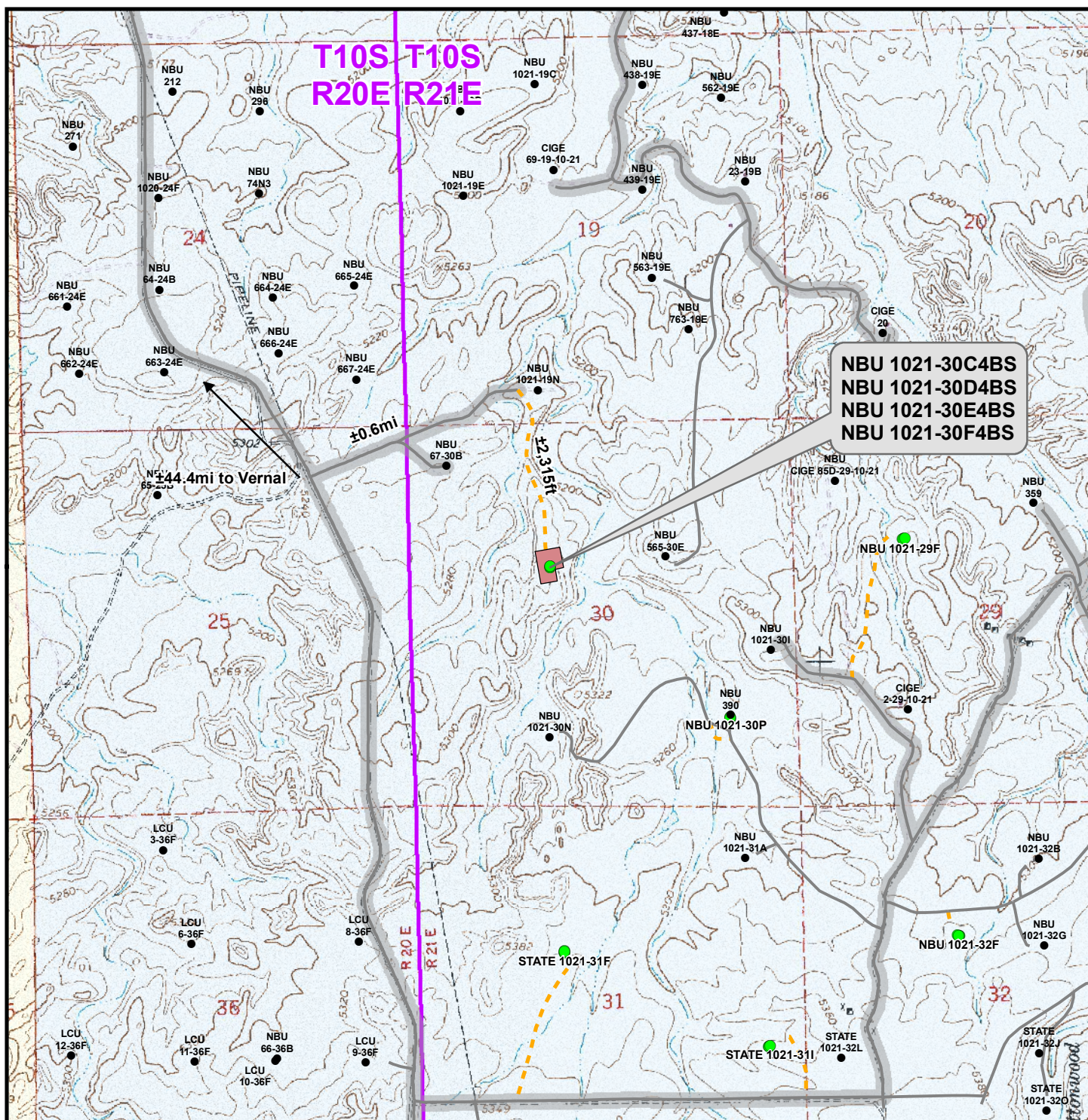
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone (307) 674-0609  
Fax (307) 674-0182



Scale: 1:100,000	NAD83 USP Central
Drawn: TL	Date: 16 Nov 2010
Revised:	Date:

Sheet No:

**10** 10 of 16



### Legend

- |                   |            |                     |               |                             |           |
|-------------------|------------|---------------------|---------------|-----------------------------|-----------|
| ● Well - Proposed | ■ Well Pad | --- Road - Proposed | — County Road | ■ Bureau of Land Management | ■ State   |
| ● Well - Existing |            | — Road - Existing   |               | ■ Indian Reservation        | ■ Private |

Total Proposed Road Length: ±2,315ft

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

### WELL PAD - NBU 1021-30F

#### TOPO B

NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH



**CONSULTING, LLC**  
2155 North Main Street  
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Phone (307) 674-0609  
Fax (307) 674-0182



Scale: 1" = 2,000ft | NAD83 USP Central  
Drawn: TL | Date: 16 Nov 2010  
Revised: | Date:

Sheet No:

11

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Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±95ft
Proposed 6" (Edge of Pad to Proposed 12" Gas Pipeline )	±100ft
Proposed 12" (Proposed 12" Gas Pipeline to 30P Intersection )	±3,420ft
TOTAL PROPOSED GAS PIPELINE =	±3,615ft

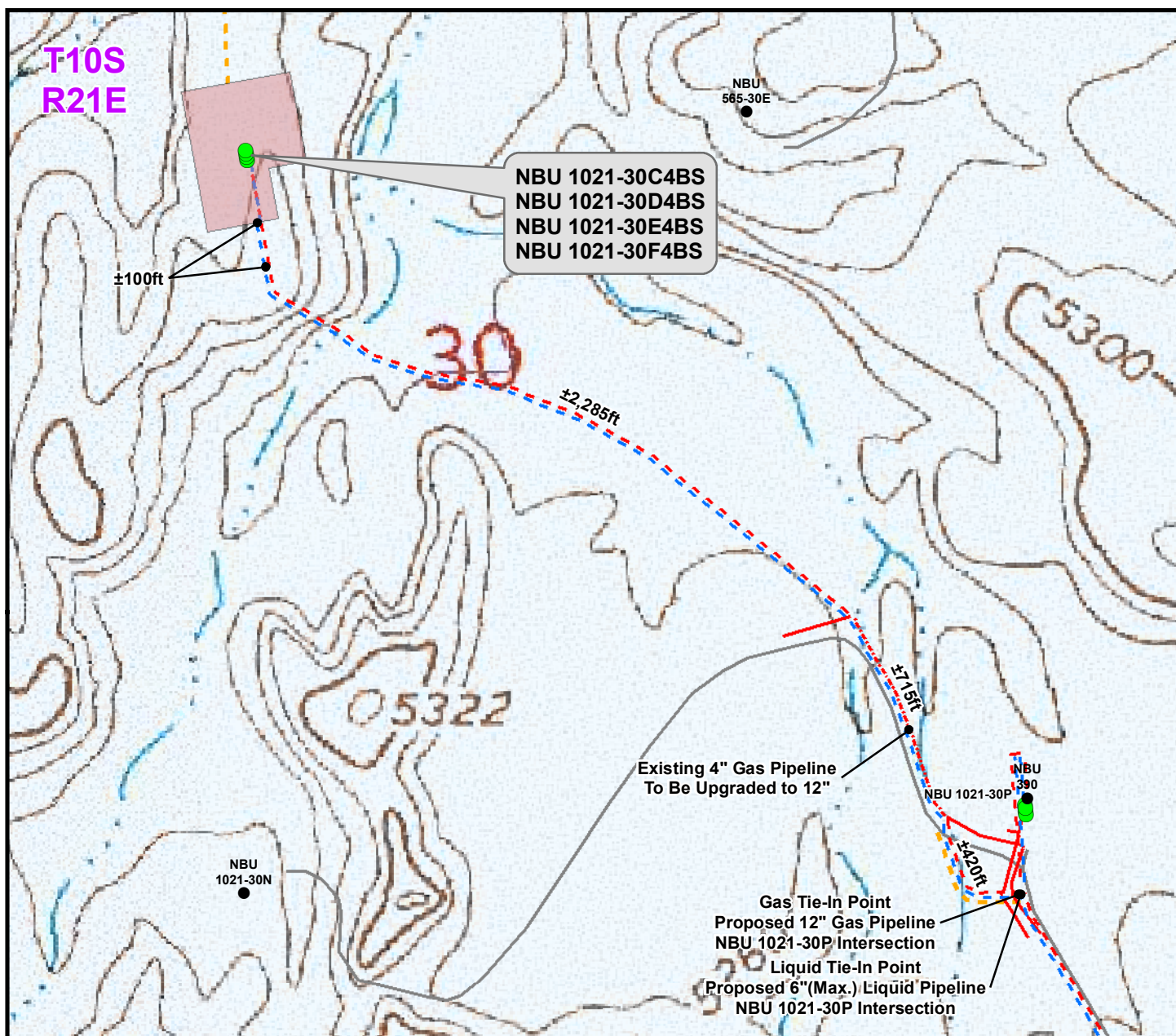
 Well - Proposed   
  Well Pad   
  Gas Pipeline - Proposed   
  Liquid Pipeline - Proposed   
  Road - Proposed   
  Bureau of Land Management  
 Well - Existing   
  Gas Pipeline - To Be Upgraded   
  Liquid Pipeline - Existing   
  Road - Existing   
  Indian Reservation  
 Gas Pipeline - Existing   
 State



**609**  
CONSULTING, LLC  
2155 North Main Street  
Sheridan, WY 82801  
Phone (307) 674-0609  
Fax (307) 674-0182



Sheet No:  
**13**  
13 of 16



Proposed Liquid Pipeline	Length
Proposed 6" (Max.) (Meter House to Edge of Pad)	±95ft
Proposed 6" (Max.) (Edge of Pad to 30P Intersection)	±3,520ft
<b>TOTAL PROPOSED LIQUID PIPELINE =</b>	<b>±3,615ft</b>

Proposed Gas Pipeline	Length
Proposed 6" (Meter House to Edge of Pad)	±95ft
Proposed 6" (Edge of Pad to Proposed 12" Gas Pipeline )	±100ft
Proposed 12" (Proposed 12" Gas Pipeline to 30P Intersection )	±3,420ft
<b>TOTAL PROPOSED GAS PIPELINE =</b>	<b>±3,615ft</b>

### Legend

- Well - Proposed
- Well - Existing
- Well Pad
- - - Gas Pipeline - Proposed
- - - Gas Pipeline - To Be Upgraded
- - - Gas Pipeline - Existing
- - - Liquid Pipeline - Proposed
- - - Liquid Pipeline - Existing
- - - Road - Proposed
- - - Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

### WELL PAD - NBU 1021-30F

**TOPO D2 (PAD & PIPELINE DETAIL)**  
NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH

**609**  
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone (307) 674-0609  
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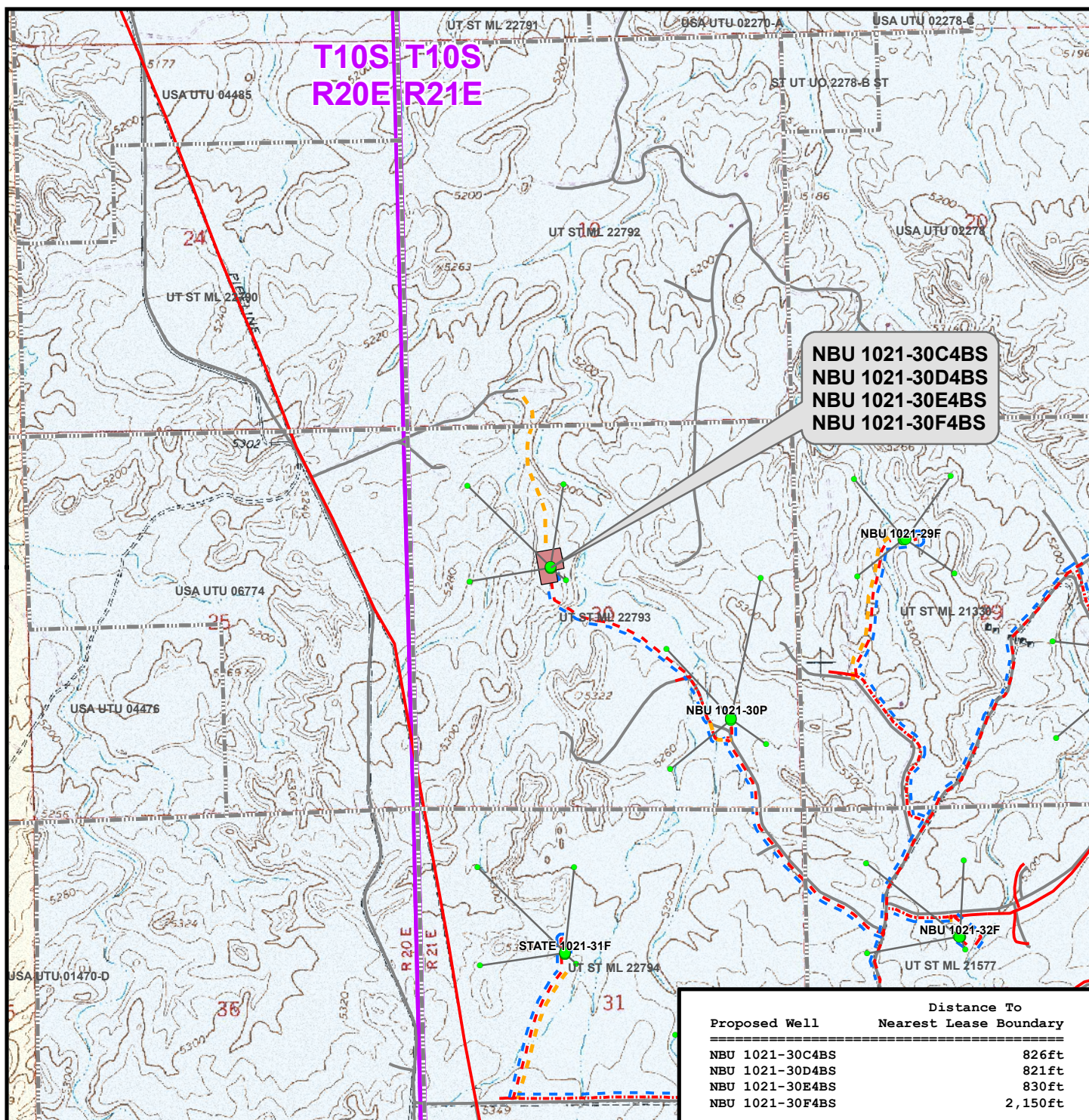


Scale: 1" = 500ft  
NAD83 USP Central  
Drawn: TL  
Revised: Date: 16 Nov 2010  
Date:

Sheet No:

**14**

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### Legend

- Well - Proposed
- Bottom Hole - Proposed
- Bottom Hole - Existing
- Well Path
- Well Pad
- ▬ Lease Boundary
- Gas Pipeline - Proposed
- Gas Pipeline - To Be Upgraded
- Gas Pipeline - Existing
- Liquid Pipeline - Proposed
- Liquid Pipeline - Existing
- Road - Proposed
- Road - Existing
- Bureau of Land Management
- Indian Reservation
- State
- Private

**Kerr-McGee Oil & Gas Onshore, LP**  
1099 18th Street, Denver, Colorado 80202

### WELL PAD - NBU 1021-30F

**TOPO E**  
NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
LOCATED IN SECTION 30, T10S, R21E,  
S.L.B.&M., UTAH COUNTY, UTAH

**609**  
**CONSULTING, LLC**  
2155 North Main Street  
Sheridan, WY 82801  
Phone (307) 674-0609  
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Scale: 1" = 2,000ft

NAD83 USP Central

Sheet No:

Drawn: TL  
Revised:

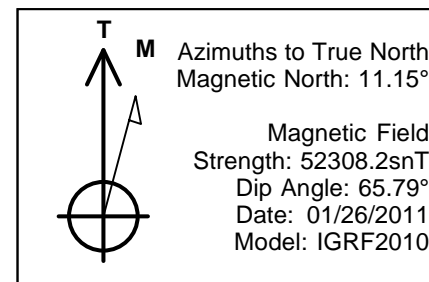
Date: 16 Nov 2010  
Date:

**15** 15 of 16

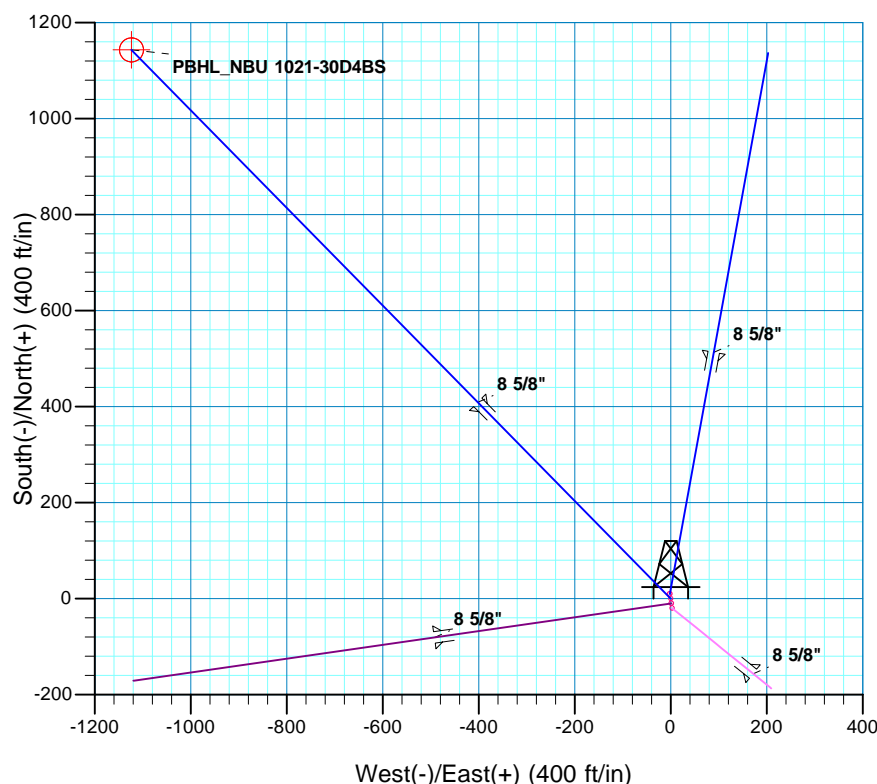
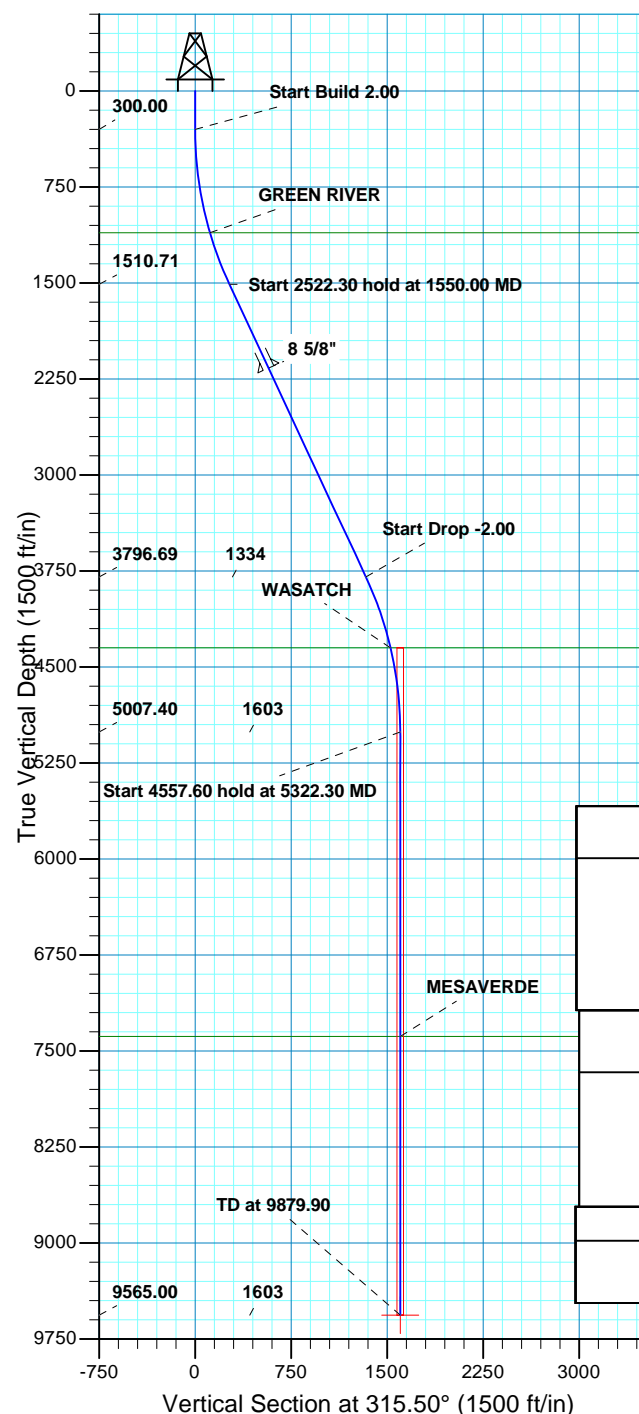
**Kerr-McGee Oil & Gas Onshore, LP  
WELL PAD – NBU 1021-30F  
WELLS – NBU 1021-30C4BS, NBU 1021-30D4BS,  
NBU 1021-30E4BS & NBU 1021-30F4BS  
Section 30, T10S, R21E, S.L.B.&M.**

From the intersection of U.S. Highway 40 and Vernal Avenue in Vernal, Utah, proceed in a westerly direction along U.S. Highway 40 approximately 13.9 miles to the junction of State Highway 88. Exit left and proceed in a southerly direction along State Highway 88 approximately 16.8 miles to Ouray, Utah. From Ouray, proceed in a southerly direction along the Seep Ridge Road (County B Road 2810) approximately 13.7 miles to the intersection of a Class D County Road to the northeast. Exit left and proceed in a northeasterly direction along the Class D County Road approximately 0.6 miles to the proposed access road. Follow road flags in a southerly direction approximately 2,315 feet to the proposed location.

Total distance from Vernal, Utah to the proposed well location is approximately 45.4 miles in a southerly direction.



WELL DETAILS: NBU 1021-30D4BS								
GL 5262' & KB 4' @ 5266.00ft (ASSUMED)								
+N/-S 0.00	+E/-W 0.00	Northing 14500186.29	Easting 2033937.08	Latitude 39° 55' 13.771 N	Longitude 109° 35' 47.450 W			
DESIGN TARGET DETAILS								
Name PBHL	TVD 9565.00	+N/-S 1143.23	+E/-W -1123.36	Northing 14501311.72	Easting 2032795.88	Latitude 39° 55' 25.072 N	Longitude 109° 36' 1.872 W	Shape Circle (Radius: 25.00)
- plan hits target center								



SECTION DETAILS									
	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
	1550.00	25.00	315.50	1510.71	191.45	-188.12	2.00	315.50	268.41
	4072.30	25.00	315.50	3796.69	951.78	-935.24	0.00	0.00	1334.38
	5322.30	0.00	0.00	5007.40	1143.23	-1123.36	2.00	180.00	1602.79
	9879.90	0.00	0.00	9565.00	1143.23	-1123.36	0.00	0.00	1602.79
PBHL_NBU 1021-30D4BS									
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N							FORMATION TOP DETAILS		
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 30 T10S R21E System Datum: Mean Sea Level							TVDPath	MDPath	Formation
							1107.00	1118.07	GREEN RIVER
							4351.00	4660.01	WASATCH
							7386.00	7700.90	MESAVERDE
CASING DETAILS									
				TVD	MD	Name	Size		
				2165.00	2271.93	8 5/8"	8.625		

PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N  
 Geodetic System: Universal Transverse Mercator (US Survey Feet)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: Zone 12N (114 W to 108 W)  
 Location: SECTION 30 T10S R21E  
 System Datum: Mean Sea Level



# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N**

**UINTAH\_NBU 1021-30F PAD**

**NBU 1021-30D4BS**

**NBU 1021-30D4BS**

**Plan: PLAN #1 1-26-11 RHS**

## **Standard Planning Report**

**26 January, 2011**





# SDI Planning Report



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

Site						UINTAH_NBU 1021-30F PAD, SECTION 30 T10S R21E											
Site Position:			Northing:			14,500,196.10 usft			Latitude:			39° 55' 13.868 N					
From:			Lat/Long			Easting:			2,033,935.24 usft			Longitude:			109° 35' 47.472 W		
Position Uncertainty:			0.00 ft			Slot Radius:			13.200 in			Grid Convergence:			0.90		

Well	NBU 1021-30D4BS, 1964 FNL 1950 FWL					
Well Position	+N/-S	-9.83 ft	Northing:	14,500,186.29 usft	Latitude:	39° 55' 13.771 N
	+E/-W	1.68 ft	Easting:	2,033,937.07 usft	Longitude:	109° 35' 47.450 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,262.00 ft

<b>Wellbore</b>	NBU 1021-30D4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	01/26/2011	11.15	65.79	52,308

<b>Design</b>	PLAN #1 1-26-11 RHS			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	315.50

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	315.50	1,510.71	191.45	-188.12	2.00	2.00	0.00	315.50	
4,072.30	25.00	315.50	3,796.69	951.78	-935.24	0.00	0.00	0.00	0.00	
5,322.30	0.00	0.00	5,007.40	1,143.23	-1,123.36	2.00	-2.00	0.00	180.00	
9,879.90	0.00	0.00	9,565.00	1,143.23	-1,123.36	0.00	0.00	0.00	0.00	PBHL_NBU 1021-30F



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
400.00	2.00	315.50	399.98	1.24	-1.22	1.75	2.00	2.00	0.00
500.00	4.00	315.50	499.84	4.98	-4.89	6.98	2.00	2.00	0.00
600.00	6.00	315.50	599.45	11.19	-11.00	15.69	2.00	2.00	0.00
700.00	8.00	315.50	698.70	19.89	-19.54	27.88	2.00	2.00	0.00
800.00	10.00	315.50	797.47	31.04	-30.50	43.52	2.00	2.00	0.00
900.00	12.00	315.50	895.62	44.65	-43.88	62.60	2.00	2.00	0.00
1,000.00	14.00	315.50	993.06	60.70	-59.64	85.10	2.00	2.00	0.00
1,100.00	16.00	315.50	1,089.64	79.16	-77.78	110.98	2.00	2.00	0.00
1,118.07	16.36	315.50	1,107.00	82.75	-81.31	116.01	2.00	2.00	0.00
<b>GREEN RIVER</b>									
1,200.00	18.00	315.50	1,185.27	100.01	-98.27	140.21	2.00	2.00	0.00
1,300.00	20.00	315.50	1,279.82	123.23	-121.09	172.77	2.00	2.00	0.00
1,400.00	22.00	315.50	1,373.17	148.79	-146.21	208.60	2.00	2.00	0.00
1,500.00	24.00	315.50	1,465.21	176.66	-173.59	247.67	2.00	2.00	0.00
1,550.00	25.00	315.50	1,510.71	191.45	-188.12	268.41	2.00	2.00	0.00
<b>Start 2522.30 hold at 1550.00 MD</b>									
1,600.00	25.00	315.50	1,556.03	206.52	-202.93	289.54	0.00	0.00	0.00
1,700.00	25.00	315.50	1,646.66	236.67	-232.55	331.80	0.00	0.00	0.00
1,800.00	25.00	315.50	1,737.29	266.81	-262.17	374.06	0.00	0.00	0.00
1,900.00	25.00	315.50	1,827.92	296.96	-291.79	416.32	0.00	0.00	0.00
2,000.00	25.00	315.50	1,918.55	327.10	-321.41	458.59	0.00	0.00	0.00
2,100.00	25.00	315.50	2,009.18	357.24	-351.04	500.85	0.00	0.00	0.00
2,200.00	25.00	315.50	2,099.81	387.39	-380.66	543.11	0.00	0.00	0.00
2,271.93	25.00	315.50	2,165.00	409.07	-401.96	573.51	0.00	0.00	0.00
<b>8 5/8"</b>									
2,300.00	25.00	315.50	2,190.44	417.53	-410.28	585.37	0.00	0.00	0.00
2,400.00	25.00	315.50	2,281.07	447.68	-439.90	627.63	0.00	0.00	0.00
2,500.00	25.00	315.50	2,371.70	477.82	-469.52	669.90	0.00	0.00	0.00
2,600.00	25.00	315.50	2,462.34	507.97	-499.14	712.16	0.00	0.00	0.00
2,700.00	25.00	315.50	2,552.97	538.11	-528.76	754.42	0.00	0.00	0.00
2,800.00	25.00	315.50	2,643.60	568.25	-558.38	796.68	0.00	0.00	0.00
2,900.00	25.00	315.50	2,734.23	598.40	-588.00	838.94	0.00	0.00	0.00
3,000.00	25.00	315.50	2,824.86	628.54	-617.62	881.20	0.00	0.00	0.00
3,100.00	25.00	315.50	2,915.49	658.69	-647.24	923.47	0.00	0.00	0.00
3,200.00	25.00	315.50	3,006.12	688.83	-676.86	965.73	0.00	0.00	0.00
3,300.00	25.00	315.50	3,096.75	718.98	-706.48	1,007.99	0.00	0.00	0.00
3,400.00	25.00	315.50	3,187.38	749.12	-736.10	1,050.25	0.00	0.00	0.00
3,500.00	25.00	315.50	3,278.01	779.27	-765.72	1,092.51	0.00	0.00	0.00
3,600.00	25.00	315.50	3,368.64	809.41	-795.34	1,134.78	0.00	0.00	0.00
3,700.00	25.00	315.50	3,459.27	839.55	-824.96	1,177.04	0.00	0.00	0.00
3,800.00	25.00	315.50	3,549.90	869.70	-854.58	1,219.30	0.00	0.00	0.00
3,900.00	25.00	315.50	3,640.54	899.84	-884.21	1,261.56	0.00	0.00	0.00
4,000.00	25.00	315.50	3,731.17	929.99	-913.83	1,303.82	0.00	0.00	0.00
4,072.30	25.00	315.50	3,796.69	951.78	-935.24	1,334.38	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
4,100.00	24.45	315.50	3,821.85	960.05	-943.36	1,345.96	2.00	-2.00	0.00



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,200.00	22.45	315.50	3,913.59	988.42	-971.25	1,385.75	2.00	-2.00	0.00	
4,300.00	20.45	315.50	4,006.66	1,014.50	-996.87	1,422.31	2.00	-2.00	0.00	
4,400.00	18.45	315.50	4,100.95	1,038.25	-1,020.20	1,455.60	2.00	-2.00	0.00	
4,500.00	16.45	315.50	4,196.35	1,059.63	-1,041.22	1,485.58	2.00	-2.00	0.00	
4,600.00	14.45	315.50	4,292.73	1,078.63	-1,059.88	1,512.21	2.00	-2.00	0.00	
4,660.01	13.25	315.50	4,351.00	1,088.87	-1,069.95	1,526.57	2.00	-2.00	0.00	
<b>WASATCH</b>										
4,700.00	12.45	315.50	4,389.99	1,095.21	-1,076.18	1,535.46	2.00	-2.00	0.00	
4,800.00	10.45	315.50	4,487.99	1,109.36	-1,090.08	1,555.31	2.00	-2.00	0.00	
4,900.00	8.45	315.50	4,586.63	1,121.07	-1,101.59	1,571.72	2.00	-2.00	0.00	
5,000.00	6.45	315.50	4,685.78	1,130.31	-1,110.67	1,584.67	2.00	-2.00	0.00	
5,100.00	4.45	315.50	4,785.33	1,137.08	-1,117.32	1,594.16	2.00	-2.00	0.00	
5,200.00	2.45	315.50	4,885.14	1,141.37	-1,121.53	1,600.18	2.00	-2.00	0.00	
5,300.00	0.45	315.50	4,985.11	1,143.17	-1,123.30	1,602.70	2.00	-2.00	0.00	
5,322.30	0.00	0.00	5,007.40	1,143.23	-1,123.36	1,602.79	2.00	-2.00	0.00	
<b>Start 4557.60 hold at 5322.30 MD</b>										
5,400.00	0.00	0.00	5,085.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,185.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,285.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,385.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,485.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,585.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,685.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,100.00	0.00	0.00	5,785.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,200.00	0.00	0.00	5,885.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,300.00	0.00	0.00	5,985.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,085.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,185.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,285.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,385.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,485.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,585.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,685.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,785.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,885.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,985.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,085.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,185.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,285.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,385.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,700.90	0.00	0.00	7,386.00	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
<b>MESAVERDE</b>										
7,800.00	0.00	0.00	7,485.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,585.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,685.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,785.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,200.00	0.00	0.00	7,885.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,300.00	0.00	0.00	7,985.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,085.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,185.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,285.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,385.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00	



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,800.00	0.00	0.00	8,485.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
8,900.00	0.00	0.00	8,585.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,000.00	0.00	0.00	8,685.10	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,100.00	0.00	0.00	8,785.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,200.00	0.00	0.00	8,885.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,300.00	0.00	0.00	8,985.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,400.00	0.00	0.00	9,085.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,500.00	0.00	0.00	9,185.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,600.00	0.00	0.00	9,285.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,700.00	0.00	0.00	9,385.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,800.00	0.00	0.00	9,485.11	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
9,879.90	0.00	0.00	9,565.00	1,143.23	-1,123.36	1,602.79	0.00	0.00	0.00
TD at 9879.90 - PBHL_NBU 1021-30D4BS									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_NBU 1021-30D4BS - plan hits target center - Circle (radius 25.00)	0.00	0.00	9,565.00	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
2,271.93	2,165.00	8 5/8"	8.625	11.000	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,118.07	1,107.00	GREEN RIVER			
4,660.01	4,351.00	WASATCH			
7,700.90	7,386.00	MESAVERDE			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,550.00	1,510.71	191.45	-188.12	Start 2522.30 hold at 1550.00 MD
4,072.30	3,796.69	951.78	-935.24	Start Drop -2.00
5,322.30	5,007.40	1,143.23	-1,123.36	Start 4557.60 hold at 5322.30 MD
9,879.90	9,565.00	1,143.23	-1,123.36	TD at 9879.90



# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N**

**UINTAH\_NBU 1021-30F PAD**

**NBU 1021-30D4BS**

**NBU 1021-30D4BS**

**Plan: PLAN #1 1-26-11 RHS**

## **Standard Planning Report - Geographic**

**26 January, 2011**



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	UINTAH_NBU 1021-30F PAD, SECTION 30 T10S R21E		
<b>Site Position:</b>		<b>Northing:</b>	14,500,196.10 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,033,935.24 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Grid Convergence:</b>	0.90 °

<b>Well</b>	NBU 1021-30D4BS, 1964 FNL 1950 FWL		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 14,500,186.29 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 2,033,937.07 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 39° 55' 13.771 N
			<b>Longitude:</b> 109° 35' 47.450 W
			<b>Ground Level:</b> 5,262.00 ft

<b>Wellbore</b>	NBU 1021-30D4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	01/26/2011	11.15	65.79	52,308

<b>Design</b>	PLAN #1 1-26-11 RHS			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	315.50

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	315.50	1,510.71	191.45	-188.12	2.00	2.00	0.00	315.50	
4,072.30	25.00	315.50	3,796.69	951.78	-935.24	0.00	0.00	0.00	0.00	
5,322.30	0.00	0.00	5,007.40	1,143.23	-1,123.36	2.00	-2.00	0.00	180.00	
9,879.90	0.00	0.00	9,565.00	1,143.23	-1,123.36	0.00	0.00	0.00	0.00	PBHL_NBU 1021-30F



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,500,186.29	2,033,937.07	39° 55' 13.771 N	109° 35' 47.450 W
100.00	0.00	0.00	100.00	0.00	0.00	14,500,186.29	2,033,937.07	39° 55' 13.771 N	109° 35' 47.450 W
200.00	0.00	0.00	200.00	0.00	0.00	14,500,186.29	2,033,937.07	39° 55' 13.771 N	109° 35' 47.450 W
300.00	0.00	0.00	300.00	0.00	0.00	14,500,186.29	2,033,937.07	39° 55' 13.771 N	109° 35' 47.450 W
<b>Start Build 2.00</b>									
400.00	2.00	315.50	399.98	1.24	-1.22	14,500,187.52	2,033,935.83	39° 55' 13.784 N	109° 35' 47.466 W
500.00	4.00	315.50	499.84	4.98	-4.89	14,500,191.19	2,033,932.11	39° 55' 13.820 N	109° 35' 47.513 W
600.00	6.00	315.50	599.45	11.19	-11.00	14,500,197.31	2,033,925.90	39° 55' 13.882 N	109° 35' 47.592 W
700.00	8.00	315.50	698.70	19.89	-19.54	14,500,205.87	2,033,917.22	39° 55' 13.968 N	109° 35' 47.701 W
800.00	10.00	315.50	797.47	31.04	-30.50	14,500,216.85	2,033,906.09	39° 55' 14.078 N	109° 35' 47.842 W
900.00	12.00	315.50	895.62	44.65	-43.88	14,500,230.25	2,033,892.50	39° 55' 14.213 N	109° 35' 48.014 W
1,000.00	14.00	315.50	993.06	60.70	-59.64	14,500,246.05	2,033,876.49	39° 55' 14.371 N	109° 35' 48.216 W
1,100.00	16.00	315.50	1,089.64	79.16	-77.78	14,500,264.22	2,033,858.06	39° 55' 14.554 N	109° 35' 48.449 W
1,118.07	16.36	315.50	1,107.00	82.75	-81.31	14,500,267.75	2,033,854.47	39° 55' 14.589 N	109° 35' 48.494 W
<b>GREEN RIVER</b>									
1,200.00	18.00	315.50	1,185.27	100.01	-98.27	14,500,284.75	2,033,837.24	39° 55' 14.760 N	109° 35' 48.712 W
1,300.00	20.00	315.50	1,279.82	123.23	-121.09	14,500,307.61	2,033,814.06	39° 55' 14.989 N	109° 35' 49.005 W
1,400.00	22.00	315.50	1,373.17	148.79	-146.21	14,500,332.77	2,033,788.55	39° 55' 15.242 N	109° 35' 49.327 W
1,500.00	24.00	315.50	1,465.21	176.66	-173.59	14,500,360.20	2,033,760.73	39° 55' 15.517 N	109° 35' 49.679 W
1,550.00	25.00	315.50	1,510.71	191.45	-188.12	14,500,374.76	2,033,745.97	39° 55' 15.664 N	109° 35' 49.865 W
<b>Start 2522.30 hold at 1550.00 MD</b>									
1,600.00	25.00	315.50	1,556.03	206.52	-202.93	14,500,389.60	2,033,730.92	39° 55' 15.813 N	109° 35' 50.056 W
1,700.00	25.00	315.50	1,646.66	236.67	-232.55	14,500,419.27	2,033,700.83	39° 55' 16.111 N	109° 35' 50.436 W
1,800.00	25.00	315.50	1,737.29	266.81	-262.17	14,500,448.95	2,033,670.74	39° 55' 16.409 N	109° 35' 50.816 W
1,900.00	25.00	315.50	1,827.92	296.96	-291.79	14,500,478.62	2,033,640.65	39° 55' 16.707 N	109° 35' 51.196 W
2,000.00	25.00	315.50	1,918.55	327.10	-321.41	14,500,508.30	2,033,610.56	39° 55' 17.005 N	109° 35' 51.577 W
2,100.00	25.00	315.50	2,009.18	357.24	-351.04	14,500,537.97	2,033,580.47	39° 55' 17.302 N	109° 35' 51.957 W
2,200.00	25.00	315.50	2,099.81	387.39	-380.66	14,500,567.65	2,033,550.38	39° 55' 17.600 N	109° 35' 52.337 W
2,271.93	25.00	315.50	2,165.00	409.07	-401.96	14,500,588.99	2,033,528.73	39° 55' 17.815 N	109° 35' 52.611 W
<b>8 5/8"</b>									
2,300.00	25.00	315.50	2,190.44	417.53	-410.28	14,500,597.32	2,033,520.29	39° 55' 17.898 N	109° 35' 52.717 W
2,400.00	25.00	315.50	2,281.07	447.68	-439.90	14,500,627.00	2,033,490.19	39° 55' 18.196 N	109° 35' 53.098 W
2,500.00	25.00	315.50	2,371.70	477.82	-469.52	14,500,656.67	2,033,460.10	39° 55' 18.494 N	109° 35' 53.478 W
2,600.00	25.00	315.50	2,462.34	507.97	-499.14	14,500,686.35	2,033,430.01	39° 55' 18.792 N	109° 35' 53.858 W
2,700.00	25.00	315.50	2,552.97	538.11	-528.76	14,500,716.02	2,033,399.92	39° 55' 19.090 N	109° 35' 54.238 W
2,800.00	25.00	315.50	2,643.60	568.25	-558.38	14,500,745.70	2,033,369.83	39° 55' 19.388 N	109° 35' 54.619 W
2,900.00	25.00	315.50	2,734.23	598.40	-588.00	14,500,775.37	2,033,339.74	39° 55' 19.686 N	109° 35' 54.999 W
3,000.00	25.00	315.50	2,824.86	628.54	-617.62	14,500,805.05	2,033,309.65	39° 55' 19.984 N	109° 35' 55.379 W
3,100.00	25.00	315.50	2,915.49	658.69	-647.24	14,500,834.72	2,033,279.56	39° 55' 20.282 N	109° 35' 55.759 W
3,200.00	25.00	315.50	3,006.12	688.83	-676.86	14,500,864.40	2,033,249.47	39° 55' 20.580 N	109° 35' 56.140 W
3,300.00	25.00	315.50	3,096.75	718.98	-706.48	14,500,894.07	2,033,219.38	39° 55' 20.878 N	109° 35' 56.520 W
3,400.00	25.00	315.50	3,187.38	749.12	-736.10	14,500,923.75	2,033,189.29	39° 55' 21.176 N	109° 35' 56.900 W
3,500.00	25.00	315.50	3,278.01	779.27	-765.72	14,500,953.42	2,033,159.20	39° 55' 21.474 N	109° 35' 57.281 W
3,600.00	25.00	315.50	3,368.64	809.41	-795.34	14,500,983.10	2,033,129.11	39° 55' 21.772 N	109° 35' 57.661 W
3,700.00	25.00	315.50	3,459.27	839.55	-824.96	14,501,012.77	2,033,099.02	39° 55' 22.070 N	109° 35' 58.041 W
3,800.00	25.00	315.50	3,549.90	869.70	-854.58	14,501,042.45	2,033,068.92	39° 55' 22.368 N	109° 35' 58.421 W
3,900.00	25.00	315.50	3,640.54	899.84	-884.21	14,501,072.12	2,033,038.83	39° 55' 22.666 N	109° 35' 58.802 W
4,000.00	25.00	315.50	3,731.17	929.99	-913.83	14,501,101.80	2,033,008.74	39° 55' 22.964 N	109° 35' 59.182 W
4,072.30	25.00	315.50	3,796.69	951.78	-935.24	14,501,123.25	2,032,986.99	39° 55' 23.179 N	109° 35' 59.457 W
<b>Start Drop -2.00</b>									
4,100.00	24.45	315.50	3,821.85	960.05	-943.36	14,501,131.39	2,032,978.74	39° 55' 23.261 N	109° 35' 59.561 W
4,200.00	22.45	315.50	3,913.59	988.42	-971.25	14,501,159.32	2,032,950.41	39° 55' 23.541 N	109° 35' 59.919 W



<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,300.00	20.45	315.50	4,006.66	1,014.50	-996.87	14,501,185.00	2,032,924.38	39° 55' 23.799 N	109° 36' 0.248 W
4,400.00	18.45	315.50	4,100.95	1,038.25	-1,020.20	14,501,208.37	2,032,900.68	39° 55' 24.034 N	109° 36' 0.548 W
4,500.00	16.45	315.50	4,196.35	1,059.63	-1,041.22	14,501,229.42	2,032,879.33	39° 55' 24.245 N	109° 36' 0.817 W
4,600.00	14.45	315.50	4,292.73	1,078.63	-1,059.88	14,501,248.12	2,032,860.37	39° 55' 24.433 N	109° 36' 1.057 W
4,660.01	13.25	315.50	4,351.00	1,088.87	-1,069.95	14,501,258.20	2,032,850.14	39° 55' 24.534 N	109° 36' 1.186 W
<b>WASATCH</b>									
4,700.00	12.45	315.50	4,389.99	1,095.21	-1,076.18	14,501,264.45	2,032,843.81	39° 55' 24.597 N	109° 36' 1.266 W
4,800.00	10.45	315.50	4,487.99	1,109.36	-1,090.08	14,501,278.38	2,032,829.69	39° 55' 24.737 N	109° 36' 1.445 W
4,900.00	8.45	315.50	4,586.63	1,121.07	-1,101.59	14,501,289.90	2,032,818.00	39° 55' 24.853 N	109° 36' 1.592 W
5,000.00	6.45	315.50	4,685.78	1,130.31	-1,110.67	14,501,299.00	2,032,808.77	39° 55' 24.944 N	109° 36' 1.709 W
5,100.00	4.45	315.50	4,785.33	1,137.08	-1,117.32	14,501,305.67	2,032,802.02	39° 55' 25.011 N	109° 36' 1.794 W
5,200.00	2.45	315.50	4,885.14	1,141.37	-1,121.53	14,501,309.89	2,032,797.74	39° 55' 25.053 N	109° 36' 1.849 W
5,300.00	0.45	315.50	4,985.11	1,143.17	-1,123.30	14,501,311.66	2,032,795.94	39° 55' 25.071 N	109° 36' 1.871 W
5,322.30	0.00	0.00	5,007.40	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
<b>Start 4557.60 hold at 5322.30 MD</b>									
5,400.00	0.00	0.00	5,085.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
5,500.00	0.00	0.00	5,185.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
5,600.00	0.00	0.00	5,285.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
5,700.00	0.00	0.00	5,385.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
5,800.00	0.00	0.00	5,485.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
5,900.00	0.00	0.00	5,585.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,000.00	0.00	0.00	5,685.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,100.00	0.00	0.00	5,785.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,200.00	0.00	0.00	5,885.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,300.00	0.00	0.00	5,985.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,400.00	0.00	0.00	6,085.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,500.00	0.00	0.00	6,185.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,600.00	0.00	0.00	6,285.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,700.00	0.00	0.00	6,385.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,800.00	0.00	0.00	6,485.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
6,900.00	0.00	0.00	6,585.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,000.00	0.00	0.00	6,685.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,100.00	0.00	0.00	6,785.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,200.00	0.00	0.00	6,885.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,300.00	0.00	0.00	6,985.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,400.00	0.00	0.00	7,085.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,500.00	0.00	0.00	7,185.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,600.00	0.00	0.00	7,285.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,700.00	0.00	0.00	7,385.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,700.90	0.00	0.00	7,386.00	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
<b>MESAVERDE</b>									
7,800.00	0.00	0.00	7,485.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
7,900.00	0.00	0.00	7,585.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,000.00	0.00	0.00	7,685.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,100.00	0.00	0.00	7,785.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,200.00	0.00	0.00	7,885.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,300.00	0.00	0.00	7,985.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,400.00	0.00	0.00	8,085.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,500.00	0.00	0.00	8,185.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,600.00	0.00	0.00	8,285.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,700.00	0.00	0.00	8,385.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W
8,800.00	0.00	0.00	8,485.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>MD Reference:</b>	GL 5262' & KB 4' @ 5266.00ft (ASSUMED)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>North Reference:</b>	True
<b>Well:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	NBU 1021-30D4BS		
<b>Design:</b>	PLAN #1 1-26-11 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,900.00	0.00	0.00	8,585.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,000.00	0.00	0.00	8,685.10	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,100.00	0.00	0.00	8,785.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,200.00	0.00	0.00	8,885.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,300.00	0.00	0.00	8,985.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,400.00	0.00	0.00	9,085.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,500.00	0.00	0.00	9,185.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,600.00	0.00	0.00	9,285.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,700.00	0.00	0.00	9,385.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,800.00	0.00	0.00	9,485.11	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
9,879.90	0.00	0.00	9,565.00	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
TD at 9879.90 - PBHL_NBU 1021-30D4BS										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
PBHL_NBU 1021-30D4BS	0.00	0.00	9,565.00	1,143.23	-1,123.36	14,501,311.72	2,032,795.88	39° 55' 25.072 N	109° 36' 1.872 W	
- plan hits target center										
- Circle (radius 25.00)										

Casing Points							Casing Diameter (in)	Hole Diameter (in)
Measured Depth (ft)	Vertical Depth (ft)	Name						
2,271.93	2,165.00	8 5/8"					8.625	11.000

Formations							Dip (°)	Dip Direction (°)
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology					
1,118.07	1,107.00	GREEN RIVER						
4,660.01	4,351.00	WASATCH						
7,700.90	7,386.00	MESAVERDE						

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
300.00	300.00	0.00	0.00	Start Build 2.00	
1,550.00	1,510.71	191.45	-188.12	Start 2522.30 hold at 1550.00 MD	
4,072.30	3,796.69	951.78	-935.24	Start Drop -2.00	
5,322.30	5,007.40	1,143.23	-1,123.36	Start 4557.60 hold at 5322.30 MD	
9,879.90	9,565.00	1,143.23	-1,123.36	TD at 9879.90	

**NBU 1021-30C4BS**

Surface: 1,954' FNL 1,948' FWL (SE/4NW/4)  
BHL: 826' FNL 2,156' FEL (NE/4NW/4)

**NBU 1021-30D4BS**

Surface: 1,964' FNL 1,950' FWL (SE/4NW/4)  
BHL: 821' FNL 829' FWL (NW/4NW/4) Lot 1

**NBU 1021-30E4BS**

Surface: 1,973' FNL 1,951' FWL (SE/4NW/4)  
BHL: 2,136' FNL 830' FWL (SW/4NW/4) Lot 2

**NBU 1021-30F4BS**

Surface: 1,983' FNL 1,953' FWL (SE/4NW/4)  
BHL: 2,150' FNL 2,159' FWL (SE/4NW/4)

Pad: NBU 1021-30F  
Section 30 T10S R21E  
Mineral Lease: ML 22793

Uintah County, Utah  
Operator: Kerr-McGee Oil & Gas Onshore LP

***MULTI-POINT SURFACE USE PLAN of OPERATIONS (SUPO)***

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including, but not limited to, APDs/SULAs/ROEs/ROWs and/or easements).

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

**A. Existing Roads:**

Existing roads consist of county roads and improved/unimproved lease roads. APC/KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

**B. Planned Access Roads:**

Approximately  $\pm 2,315'$  (0.4 miles) of new road is proposed (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

Where roads are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

Turnouts; major cut and fills; culverts; bridges; gates; cattle guards; low water crossings; or modifications needed to existing infrastructure/facilities were determined at the on-site and, as applicable, are typically shown on attached Exhibits and Topo maps.

**C. Location of Existing and Proposed Facilities:**

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of each well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) aboveground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of UDOGM.

Gathering facilities:

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 3,615'$  and the individual segments are broken up as follows:

$\pm 95'$  (0.02 miles) –New 6" buried gas pipeline from the meter to the edge of the pad.

$\pm 100'$  (0.02 miles) –New 6" buried gas pipeline from the edge of pad to the proposed 12" gas pipeline.

$\pm 3,420'$  (0.6 miles) –New 12" buried gas pipeline from the proposed 12" gas pipeline to the NBU 1021-30P Pad intersection. .

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 3,615'$  and the individual segments are broken up as follows:

- $\pm 95'$  (0.02 miles) –New 6" buried liquid pipeline from the separator to the edge of the pad.
- $\pm 3,520'$  (0.7 miles) –New 6" buried liquid pipeline from the edge of pad to the NBU 1021-30P Pad intersection.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. Kerr-McGee requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, Kerr-McGee requests a temporary 45' construction right-of-way and 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

#### **D. Location and Type of Water Supply:**

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

Water will be hauled to location over the roads marked on Maps A and B.  
No water well is to be drilled on this lease.

**E. Source of Construction Materials:**

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

**F. Methods of Handling Waste Materials:**

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

- RNI in Sec. 5 T9S R22E
- Ace Oilfield in Sec. 2 T6S R20E
- MC&MC in Sec. 12 T6S R19E
- Pipeline Facility in Sec. 36 T9S R20E
- Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E
- Bonanza Evaporation Pond in Sec. 2 T10S R23E
- Ouray #1 SWD in Sec. 1 T9S R21E
- NBU 159 SWD in Sec. 35 T9S R21E
- CIGE 112D SWD in Sec. 19 T9S R21E
- CIGE 114 SWD in Sec. 34 T9S R21E
- NBU 921-34K SWD in Sec. 34 T9S R21E
- NBU 921-33F SWD in Sec. 33 T9S R21E
- NBU 921-34L SWD in Sec. 34 T9S R21E

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20-mil or thicker. The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. Any additional pits necessary to subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

Any undesirable event, accidental release, or in excess of reportable quantities will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule, and, where State wells are participatory to a Federal agreement, according to NTL-3A.

### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition,

no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

**G. Ancillary Facilities:**

None are anticipated.

**H. Well Site Layout (see Well Pad Design Summary):**

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1983 (NAD83) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

**I. Plans for Reclamation of the Surface:**

Surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. This reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but are not limited to: re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

**Interim Reclamation**

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where

possible, the land surface will be left “rough” after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit.

### **Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by APC/KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to UDOGM.

### **Seeding and Measures Common to Interim and Final Reclamation**

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to, erosion control blankets and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for re-vegetation. The site specific seed mix will be provided by SITLA.

**J. Surface/Mineral Ownership:**

SITLA

675 East 500 South, Suite 500

Salt Lake City, UT 84102

**K. Other Information:**

None

**M. Lessee's or Operators' Representative & Certification:**

Danielle Piernot  
Regulatory Analyst I  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6156

Tommy Thompson  
General Manager, Drilling  
Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
Denver, CO 80217-3779  
(720) 929-6724

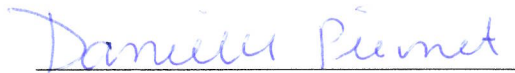
Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

  
Danielle Piernot

March 11, 2011  
Date



Kerr-McGee Oil & Gas Onshore LP  
PO Box 173779  
DENVER, CO 80217-3779

January 17, 2011

Ms. Diana Mason  
Division of Oil, Gas and Mining  
P.O. Box 145801  
Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11  
NBU 1021-30D4BS  
T10S-R21E  
Section 30: SENW (Surf), NWNW (Bottom)  
Surface: 1950' FWL, 1964' FNL  
Bottom Hole: 829' FWL, 821' FNL  
Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling.

- Kerr-McGee's NBU 1021-304BS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

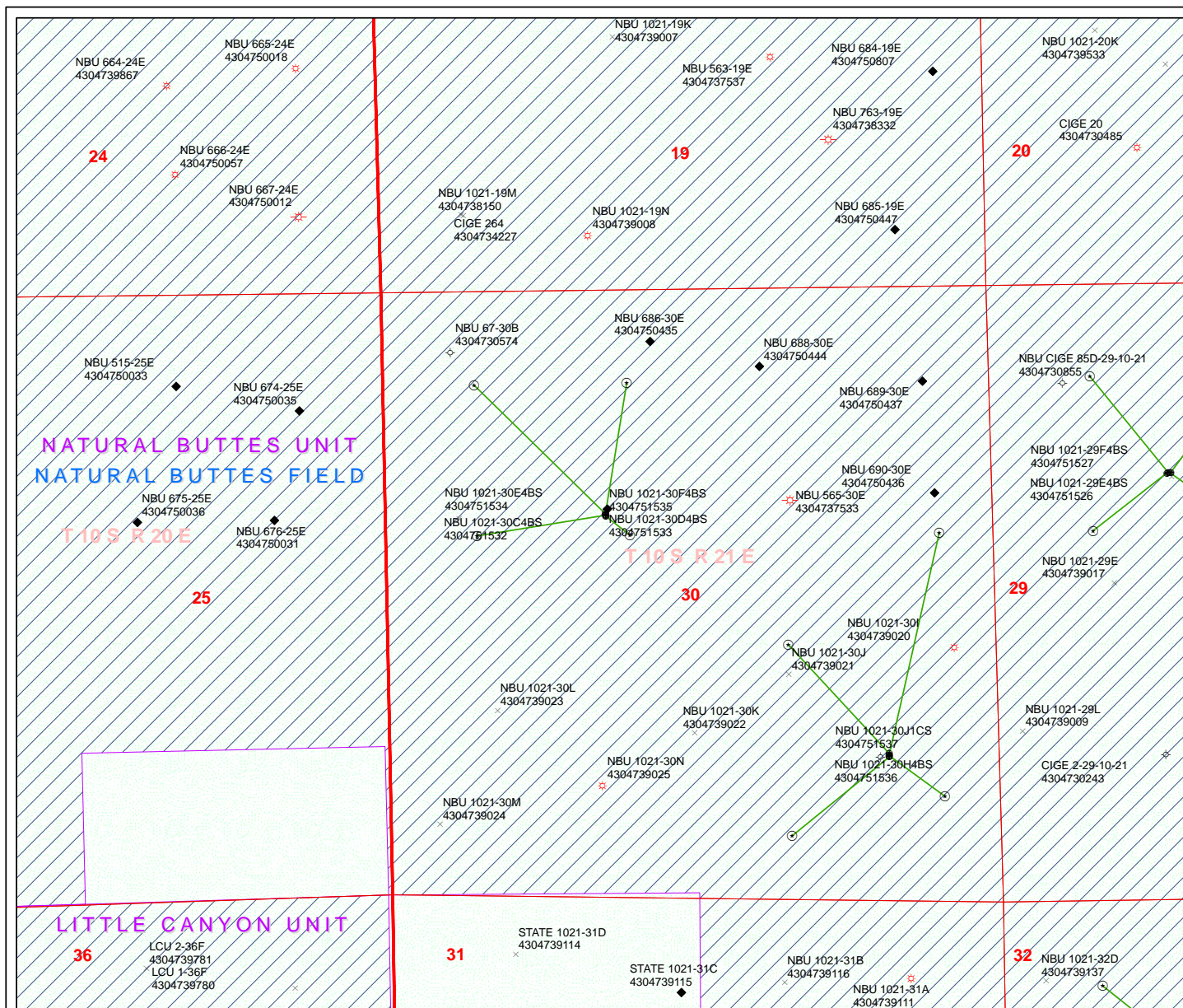
Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

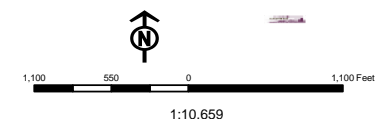
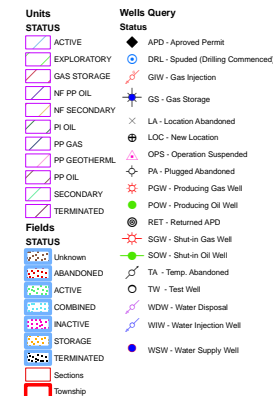
A handwritten signature in blue ink, appearing to read 'R. Spencer'.

Robert Spencer  
Landman II



**API Number: 4304751533**  
**Well Name: NBU 1021-30D4BS**  
**Township T1.0 . Range R2.1 . Section 30**  
**Meridian: SLBM**  
**Operator: KERR-MCGEE OIL & GAS ONSHORE, L.P.**

Map Prepared:  
 Map Produced by Diana Mason



# United States Department of the Interior

## BUREAU OF LAND MANAGEMENT

Utah State Office

P.O. Box 45155

Salt Lake City, Utah 84145-0155

IN REPLY REFER TO:

3160

(UT-922)

March 16, 2011

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2011 Plan of Development Natural Buttes Unit  
Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2011 within the Natural Buttes Unit, Uintah County, Utah.

API #	WELL NAME	LOCATION
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(Proposed PZ WASATCH-MESA VERDE)

### NBU 1021-30P PAD

43-047-51510	NBU 1021-30O4BS	Sec 30 T10S R21E 1179 FSL 0971 FEL
	BHL	Sec 30 T10S R21E 0499 FSL 1831 FEL

43-047-51511	NBU 1021-30P1CS	Sec 30 T10S R21E 1189 FSL 0972 FEL
	BHL	Sec 30 T10S R21E 0837 FSL 0499 FEL

### NBU 1021-32F PAD

43-047-51512	NBU 1021-32C4BS	Sec 32 T10S R21E 1872 FNL 2121 FWL
	BHL	Sec 32 T10S R21E 0825 FNL 2188 FWL

43-047-51513	NBU 1021-32D4BS	Sec 32 T10S R21E 1860 FNL 2105 FWL
	BHL	Sec 32 T10S R21E 0825 FNL 0842 FWL

43-047-51514	NBU 1021-32E4BS	Sec 32 T10S R21E 1866 FNL 2113 FWL
	BHL	Sec 32 T10S R21E 2072 FNL 0841 FWL

43-047-51515	NBU 1021-32F4BS	Sec 32 T10S R21E 1878 FNL 2129 FWL
	BHL	Sec 32 T10S R21E 2053 FNL 2191 FWL

### NBU 1021-28F PAD

43-047-51516	NBU 1021-28C4BS	Sec 28 T10S R21E 1730 FNL 2213 FWL
	BHL	Sec 28 T10S R21E 0831 FNL 2151 FWL

RECEIVED: May. 19, 2011

API #	WELL NAME	LOCATION
(Proposed PZ WASATCH-MESA VERDE)		
43-047-51517	NBU 1021-28D4BS	Sec 28 T10S R21E 1726 FNL 2204 FWL BHL Sec 28 T10S R21E 0834 FNL 0827 FWL
43-047-51518	NBU 1021-28E4BS	Sec 28 T10S R21E 1733 FNL 2222 FWL BHL Sec 28 T10S R21E 2168 FNL 0828 FWL
43-047-51519	NBU 1021-28F4BS	Sec 28 T10S R21E 1736 FNL 2232 FWL BHL Sec 28 T10S R21E 2163 FNL 2153 FWL
<b>NBU 1021-28H PAD</b>		
43-047-51520	NBU 1021-28A4BS	Sec 28 T10S R21E 2029 FNL 0866 FEL BHL Sec 28 T10S R21E 0828 FNL 0496 FEL
43-047-51521	NBU 1021-28B4BS	Sec 28 T10S R21E 2038 FNL 0871 FEL BHL Sec 28 T10S R21E 0830 FNL 1820 FEL
43-047-51522	NBU 1021-28G4BS	Sec 28 T10S R21E 2047 FNL 0876 FEL BHL Sec 28 T10S R21E 2158 FNL 1822 FEL
43-047-51523	NBU 1021-28H4BS	Sec 28 T10S R21E 2056 FNL 0880 FEL BHL Sec 28 T10S R21E 2153 FNL 0497 FEL
<b>NBU 1021-29F PAD</b>		
43-047-51524	NBU 1021-29C4BS	Sec 29 T10S R21E 1685 FNL 1518 FWL BHL Sec 29 T10S R21E 0837 FNL 2171 FWL
43-047-51525	NBU 1021-29D4BS	Sec 29 T10S R21E 1687 FNL 1498 FWL BHL Sec 29 T10S R21E 0838 FNL 0835 FWL
43-047-51526	NBU 1021-29E4BS	Sec 29 T10S R21E 1689 FNL 1488 FWL BHL Sec 29 T10S R21E 2179 FNL 0837 FWL
43-047-51527	NBU 1021-29F4BS	Sec 29 T10S R21E 1686 FNL 1508 FWL BHL Sec 29 T10S R21E 2177 FNL 2176 FWL
<b>NBU 1021-29I</b>		
43-047-51528	NBU 1021-29I1CS	Sec 29 T10S R21E 1988 FSL 0409 FEL BHL Sec 29 T10S R21E 2173 FSL 0503 FEL
43-047-51529	NBU 1021-29J1CS	Sec 29 T10S R21E 1980 FSL 0427 FEL BHL Sec 29 T10S R21E 2175 FSL 1844 FEL
43-047-51530	NBU 1021-29O1CS	Sec 29 T10S R21E 1984 FSL 0418 FEL BHL Sec 29 T10S R21E 0837 FSL 1849 FEL
43-047-51531	NBU 1021-29P1CS	Sec 29 T10S R21E 1993 FSL 0400 FEL BHL Sec 29 T10S R21E 0836 FSL 0504 FEL

API #	WELL NAME	LOCATION
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(Proposed PZ WASATCH-MESA VERDE)

**NBU 1021-30F**

43-047-51532	NBU 1021-30C4BS	Sec 30 T10S R21E 1954 FNL 1948 FWL
	BHL	Sec 30 T10S R21E 0826 FNL 2156 FWL

43-047-51533	NBU 1021-30D4BS	Sec 30 T10S R21E 1964 FNL 1950 FWL
	BHL	Sec 30 T10S R21E 0821 FNL 0829 FWL

43-047-51534	NBU 1021-30E4BS	Sec 30 T10S R21E 1973 FNL 1951 FWL
	BHL	Sec 30 T10S R21E 2136 FNL 0830 FWL

43-047-51535	NBU 1021-30F4BS	Sec 30 T10S R21E 1983 FNL 1953 FWL
	BHL	Sec 30 T10S R21E 2150 FNL 2159 FWL

**1021-30P PAD**

43-047-51536	NBU 1021-30H4BS	Sec 30 T10S R21E 1199 FSL 0972 FEL
	BHL	Sec 30 T10S R21E 2175 FNL 0498 FEL

43-047-51537	NBU 1021-30J1CS	Sec 30 T10S R21E 1209 FSL 0973 FEL
	BHL	Sec 30 T10S R21E 2162 FSL 1828 FEL

This office has no objection to permitting the wells at this time.

**Michael L. Coulthard** Digitally signed by Michael L. Coulthard  
DN: cn=Michael L. Coulthard, o=Bureau of Land Management, ou=Branch  
of Minerals, email=Michael\_Coulthard@blm.gov, c=US  
Date: 2011.03.16 12:35:54 -06'00'

bcc: File - Natural Buttes Unit  
Division of Oil Gas and Mining  
Central Files  
Agr. Sec. Chron  
Fluid Chron

MCoulthard:mc:3-16-11

**From:** Jim Davis  
**To:** Bonner, Ed; Garrison, LaVonne; Hill, Brad; Mason, Diana  
**CC:** Jacobsen, Julie; Lytle, Andy; Piernot, Danielle  
**Date:** 4/28/2011 2:24 PM  
**Subject:** Kerr McGee APD approvals (28)

The following APDs have been approved by SITLA including arch clearance. Paleo clearance is granted with the stipulations noted below.

These wells are approved with out stipulation.

4304751536 NBU 1021-30H4BS  
4304751537 NBU 1021-30J1CS  
4304751510 NBU 1021-30O4BS  
4304751511 NBU 1021-30P1CS  
4304751512 NBU 1021-32C4BS  
4304751513 NBU 1021-32D4BS  
4304751514 NBU 1021-32E4BS  
4304751515 NBU 1021-32F4BS

A permitted paleontologist needs to be on-site to observe construction of these wells/ pads.

4304751516 NBU 1021-28C4BS  
4304751517 NBU 1021-28D4BS  
4304751518 NBU 1021-28E4BS  
4304751519 NBU 1021-28F4BS  
4304751520 NBU 1021-28A4BS  
4304751521 NBU 1021-28B4BS  
4304751522 NBU 1021-28G4BS  
4304751523 NBU 1021-28H4BS  
4304751524 NBU 1021-29C4BS  
4304751525 NBU 1021-29D4BS  
4304751526 NBU 1021-29E4BS  
4304751527 NBU 1021-29F4BS  
4304751528 NBU 1021-29I1CS  
4304751529 NBU 1021-29J1CS  
4304751530 NBU 1021-29O1CS  
4304751531 NBU 1021-29P1CS  
4304751532 NBU 1021-30C4BS  
4304751533 NBU 1021-30D4BS  
4304751534 NBU 1021-30E4BS  
4304751535 NBU 1021-30F4BS

-Jim Davis

Well Name	KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 1021-30D4B			
String	Surf	Prod		
Casing Size(in)	8.625	4.500		
Setting Depth (TVD)	2070	9565		
Previous Shoe Setting Depth (TVD)	0	2070		
Max Mud Weight (ppg)	8.6	12.5		
BOPE Proposed (psi)	500	5000		
Casing Internal Yield (psi)	3390	7780		
Operators Max Anticipated Pressure (psi)	6122	12.3		

Calculations	Surf String	8.625	"	
Max BHP (psi)	.052*Setting Depth*MW=	926		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	678	NO	air drill
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	471	YES	OK
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	471	NO	Reasonable depth in area
Required Casing/BOPE Test Pressure=		2070	psi	
*Max Pressure Allowed @ Previous Casing Shoe=		0	psi *Assumes 1psi/ft frac gradient	

Calculations	Prod String	4.500	"	
Max BHP (psi)	.052*Setting Depth*MW=	6217		
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=	5069	NO	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=	4113	YES	OK
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=	4568	NO	Reasonable
Required Casing/BOPE Test Pressure=		5000	psi	
*Max Pressure Allowed @ Previous Casing Shoe=		2070	psi *Assumes 1psi/ft frac gradient	

Calculations	String		"	
Max BHP (psi)	.052*Setting Depth*MW=			
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO	
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO	
Required Casing/BOPE Test Pressure=			psi	
*Max Pressure Allowed @ Previous Casing Shoe=			psi *Assumes 1psi/ft frac gradient	

Calculations	String		"	
Max BHP (psi)	.052*Setting Depth*MW=			
			BOPE Adequate For Drilling And Setting Casing at Depth?	
MASP (Gas) (psi)	Max BHP-(0.12*Setting Depth)=		NO	
MASP (Gas/Mud) (psi)	Max BHP-(0.22*Setting Depth)=		NO	
			*Can Full Expected Pressure Be Held At Previous Shoe?	
Pressure At Previous Shoe	Max BHP-.22*(Setting Depth - Previous Shoe Depth)=		NO	
Required Casing/BOPE Test Pressure=			psi	

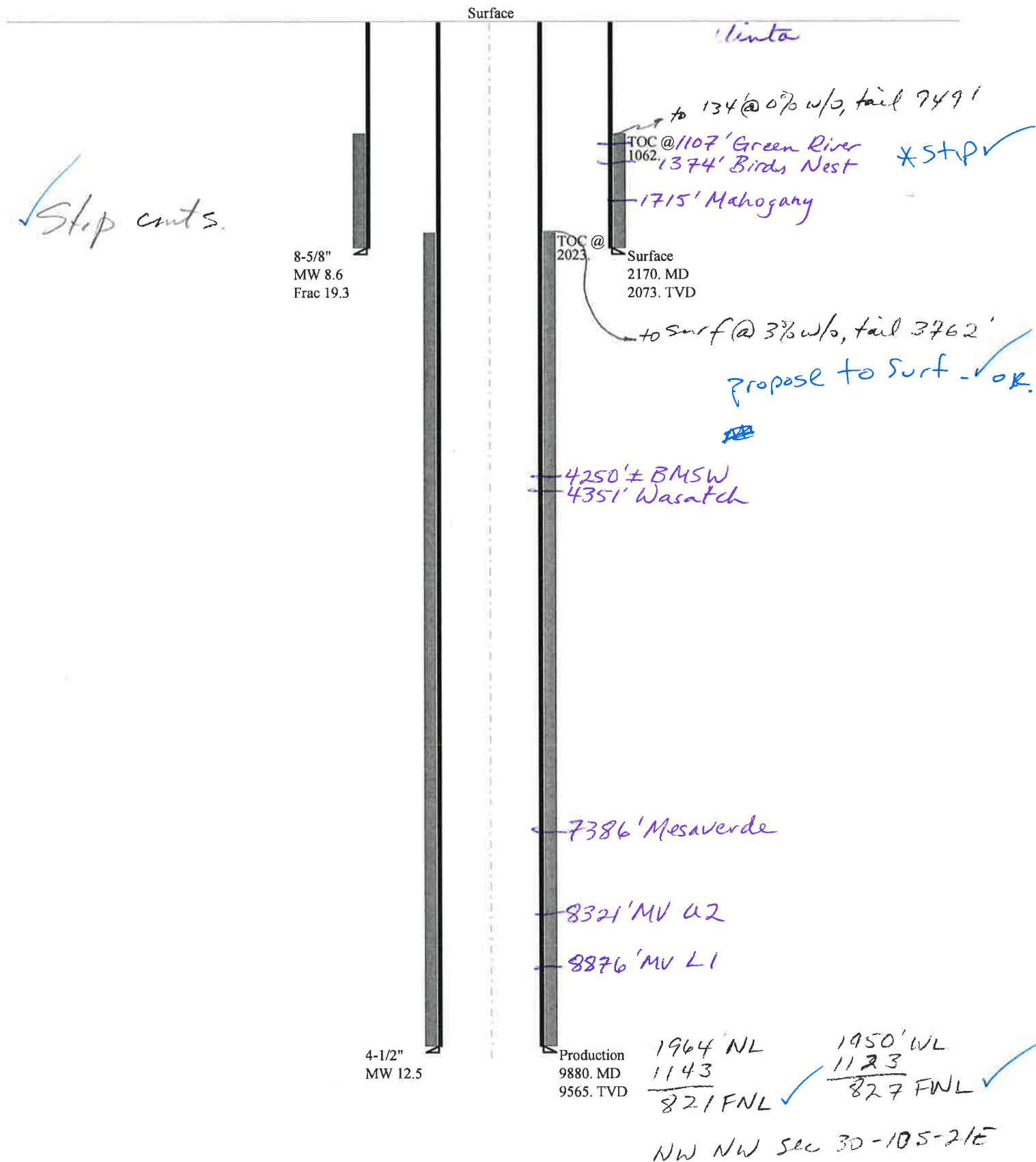
API Well Number: 43047515330000

\*Max Pressure Allowed @ Previous Casing Shoe=

psi \*Assumes 1psi/ft frac gradient

43047515330000 NBU 1021-30D4BS

Casing Schematic



Well name:	<b>43047515330000 NBU 1021-30D4BS</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Surface	Project ID: 43-047-51533
Location:	UINTAH COUNTY	

**Design parameters:****Collapse**

Mud weight: 8.600 ppg  
Design is based on evacuated pipe.

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 103 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 1,062 ft

**Burst**

Max anticipated surface pressure: 1,910 psi  
Internal gradient: 0.120 psi/ft  
Calculated BHP 2,158 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.70 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.50 (B)

Tension is based on air weight.  
Neutral point: 1,880 ft

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 530 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 25 °

**Re subsequent strings:**

Next setting depth: 9,565 ft  
Next mud weight: 12.500 ppg  
Next setting BHP: 6,211 psi  
Fracture mud wt: 19.250 ppg  
Fracture depth: 2,170 ft  
Injection pressure: 2,170 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2170	8.625	28.00	I-55	LT&C	2073	2170	7.892	85932

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	926	1880	2.030	2158	3390	1.57	58	348	6.00 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: May 17, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 2073 ft, a mud weight of 8.6 ppg. The casing is considered to be evacuated for collapse purposes.  
Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

*Engineering responsibility for use of this design will be that of the purchaser.*

**RECEIVED: May. 19, 2011**

Well name:	<b>43047515330000 NBU 1021-30D4BS</b>		
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>		
String type:	Production	Project ID:	43-047-51533
Location:	UINTAH COUNTY		

**Design parameters:****Collapse**

Mud weight: 12.500 ppg  
Internal fluid density: 2.330 ppg

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 208 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 2,023 ft

**Burst**

Max anticipated surface pressure: 4,107 psi  
Internal gradient: 0.220 psi/ft  
Calculated BHP 6,211 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

**Directional Info - Build & Drop**

Kick-off point 300 ft  
Departure at shoe: 1603 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 0 °

Tension is based on air weight.

Neutral point: 8,093 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	9880	4.5	11.60	I-80	LT&C	9565	9880	3.875	130416
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5053	6360	1.259	6211	7780	1.25	111	212	1.91 J

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: May 17, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 9565 ft, a mud weight of 12.5 ppg. An internal gradient of .121 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

*Engineering responsibility for use of this design will be that of the purchaser.*

**RECEIVED: May. 19, 2011**

# **ON-SITE PREDRILL EVALUATION**

## **Utah Division of Oil, Gas and Mining**

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.  
**Well Name** NBU 1021-30D4BS  
**API Number** 43047515330000      **APD No** 3550      **Field/Unit** NATURAL BUTTES  
**Location: 1/4,1/4** SENW      **Sec** 30      **Tw** 10.0S      **Rng** 21.0E      1964      **FNL** 1950      **FWL**  
**GPS Coord (UTM)** 619934 4419666      **Surface Owner**

### **Participants**

See other comments.

### **Regional/Local Setting & Topography**

The general area is within the Natural Buttes Unit in the middle portion of the Cottonwood Wash Drainage of Uintah County. The area is characterized by rolling hills and benches which are frequently intersected by somewhat gentle draws. The draws are occasionally rimmed with steep side hills which have exposed sand stone bedrock cliffs along the rims. Cottonwood Wash is an ephemeral drainage, which drains northerly approximately 6 miles to the White River. No seeps, springs or streams exist in the area. An occasional pond, constructed to store runoff for cattle and livestock exists.

This location is approximately 14.7 road miles south of Ouray, Utah and 45.4 road miles southwest of Vernal, Utah. It is accessed by the Seep Ridge Road then by Uintah County and existing or planned oil field development roads to within 2,315 feet of the proposed site. New construction will be required from this point.

The proposed NBU 1021-30F pad will contain 4 gas wells all to be directionally drilled. They are the NBU 1021-30C4BS, NBU 1021-30D4BS, NBU 1021-30E4BS and NBU 1021-30F4BS. The location is located longitudinally along the top of a rounded ridge which runs in a north to south direction. A swale begins on the location north of the center running in a west direction. An additional small swale is to the south. Both will be filled during construction. No diversions are needed. A large wide secondary drainage of Cottonwood wash is to the east with a smaller drainage to the west of the site. Seep Ridge road is about ½ mile to the west. Maximum cut for the pad is 12.2 feet at location corner 8 and maximum fill is 13.0 feet at corner 2.

The selected location appears to be a suitable site for drilling and operating a well, and is the best site in the immediate area

Both the surface and minerals for this location are owned by SITLA.

### **Surface Use Plan**

#### **Current Surface Use**

Grazing  
Recreational  
Wildlife Habitat

<b>New Road Miles</b>	<b>Well Pad</b>	<b>Src Const Material</b>	<b>Surface Formation</b>
0.43	<b>Width</b> 343 <b>Length</b> 455	Onsite	UNTA

**Ancillary Facilities** N

### **Waste Management Plan Adequate?**

### **Environmental Parameters**

**Affected Floodplains and/or Wetlands** N**Flora / Fauna**

Vegetation is a desert shrub type. Vegetation included shadscale, horsebrush, broom snakeweed, bud sage, curly mesquite grass, annual mustard, mat saltbrush, squirrel tail, cheat grass, prickly pear and spring annuals.

Antelope, cattle, rabbits, coyotes, and small mammals, birds and raptors.

**Soil Type and Characteristics**

Moderately deep gravelly sandy loam with surface angular rock.

**Erosion Issues** N**Sedimentation Issues** N**Site Stability Issues** N**Drainage Diversion Required?** N**Berm Required?** N**Erosion Sedimentation Control Required?** N**Paleo Survey Run?** **Paleo Potential Observed?** N **Cultural Survey Run?** Y **Cultural Resources?****Reserve Pit****Site-Specific Factors****Site Ranking**

<b>Distance to Groundwater (feet)</b>	100 to 200	5
<b>Distance to Surface Water (feet)</b>	>1000	0
<b>Dist. Nearest Municipal Well (ft)</b>	>5280	0
<b>Distance to Other Wells (feet)</b>		20
<b>Native Soil Type</b>	Mod permeability	10
<b>Fluid Type</b>	Fresh Water	5
<b>Drill Cuttings</b>	Normal Rock	0
<b>Annual Precipitation (inches)</b>		0
<b>Affected Populations</b>		
<b>Presence Nearby Utility Conduits</b>	Not Present	0
<b>Final Score</b>		40
		1 Sensitivity Level

**Characteristics / Requirements**

The reserve pit is planned primarily in a cut in the northwest corner of the location. Corner B has 0.7 feet of fill. With the planned 15-foot outer bench and 2 feet of freeboard it should be stable. Dimensions are 120' x 260' x 12' deep. Kerr McGee proposed to line the pit with a 30-mil liner and 2 layers of felt.

**Closed Loop Mud Required?** N **Liner Required?** Y **Liner Thickness** 30 **Pit Underlayment Required?** Y**Other Observations / Comments**

Floyd Bartlett (DOGM), Jim Davis (SITLA), Clay Einerson, Charles Chase, Roger Perry, Duane Holmes, Kenny Gathings, Andy Lytle and Shelia Wopsock (Kerr McGee), Alex Hansen and Ben Williams (UDWR), Mitch Batty, John Slaugh, (Timberline Engineering and Land Surveying).

Floyd Bartlett  
**Evaluator**

3/30/2011  
**Date / Time**

# Application for Permit to Drill Statement of Basis

5/19/2011

Utah Division of Oil, Gas and Mining

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<b>APD No</b>	<b>API WellNo</b>	<b>Status</b>	<b>Well Type</b>	<b>Surf Owner</b>	<b>CBM</b>
3550	43047515330000	SITLA	GW	S	No
<b>Operator</b>	KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>Surface Owner-APD</b>		
<b>Well Name</b>	NBU 1021-30D4BS		<b>Unit</b>	NATURAL BUTTES	
<b>Field</b>	NATURAL BUTTES		<b>Type of Work</b>	DRILL	
<b>Location</b>	SENW 30 10S 21E S 1964 FNL 1950 FWL GPS Coord (UTM) 619946E 4419670N				

## Geologic Statement of Basis

Kerr McGee proposes to set 2,170' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 4,250'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 30. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. Production casing cement should be brought up above the base of the moderately saline ground water to isolate it from fresher waters uphole.

 Brad Hill  
**APD Evaluator**

 4/26/2011  
**Date / Time**

## Surface Statement of Basis

The general area is within the Natural Buttes Unit in the middle portion of the Cottonwood Wash Drainage of Uintah County. The area is characterized by rolling hills and benches which are frequently intersected by somewhat gentle draws. The draws are occasionally rimmed with steep side hills which have exposed sand stone bedrock cliffs along the rims. Cottonwood Wash is an ephemeral drainage, which drains northerly approximately 6 miles to the White River. No seeps, springs or streams exist in the area. An occasional pond, constructed to store runoff for cattle and livestock exists.

This location is approximately 14.7 road miles south of Ouray, Utah and 45.4 road miles southwest of Vernal, Utah. It is accessed by the Seep Ridge Road then by Uintah County and existing or planned oil field development roads to within 2,315 feet of the proposed site. New construction will be required from this point.

The proposed NBU 1021-30F pad will contain 4 gas wells all to be directionally drilled. They are the NBU 1021-30C4BS, NBU 1021-30D4BS, NBU 1021-30E4BS and NBU 1021-30F4BS. The location is located longitudinally along the top of a rounded ridge which runs in a north to south direction. A swale begins on the location north of the center running in a west direction. An additional small swale is to the south. Both will be filled during construction. No diversions are needed. A large wide secondary drainage of Cottonwood wash is to the east with a smaller drainage to the west of the site. Seep Ridge road is about ½ mile to the west. Maximum cut for the pad is 12.2 feet at location corner 8 and maximum fill is 13.0 feet at corner 2.

The selected location appears to be a suitable site for drilling and operating a well, and is the best site in the immediate area

Both the surface and minerals for this location are owned by SITLA. Jim Davis of SITLA attended the site visit. He had no concerns regarding the proposal. A seed mix to be used in reclamation has previously been provided to Kerr McGee by SITLA for this zone. Ben Williams and Alex Hansen of the UDWR also attended. The area is classified as yearlong crucial habitat for antelope but no restrictions were recommended. No other wildlife species are expected to be significantly affected.

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# Application for Permit to Drill Statement of Basis

5/19/2011

Utah Division of Oil, Gas and Mining

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Page 2

Floyd Bartlett  
Onsite Evaluator

3/30/2011  
Date / Time

**Conditions of Approval / Application for Permit to Drill**

Category	Condition
Pits	A synthetic liner with a minimum thickness of 30 mils with a double felt subliner shall be properly installed and maintained in the reserve pit.
Surface	The reserve pit shall be fenced upon completion of drilling operations.

## WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 3/11/2011**API NO. ASSIGNED:** 43047515330000**WELL NAME:** NBU 1021-30D4BS**OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)**PHONE NUMBER:** 720 929-6156**CONTACT:** Danielle Piernot**PROPOSED LOCATION:** SENW 30 100S 210E**Permit Tech Review:** ☒**SURFACE:** 1964 FNL 1950 FWL**Engineering Review:** ☒**BOTTOM:** 0821 FNL 0829 FWL**Geology Review:** ☒**COUNTY:** UINTAH**LATITUDE:** 39.92053**LONGITUDE:** -109.59650**UTM SURF EASTINGS:** 619946.00**NORTHINGS:** 4419670.00**FIELD NAME:** NATURAL BUTTES**LEASE TYPE:** 3 - State**LEASE NUMBER:** ML 22793**PROPOSED PRODUCING FORMATION(S):** WASATCH-MESA VERDE**SURFACE OWNER:** 3 - State**COALBED METHANE:** NO**RECEIVED AND/OR REVIEWED:**

- ☒ **PLAT**
- ☒ **Bond:** STATE/FEE - 22013542
- ☐ **Potash**
- ☒ **Oil Shale 190-5**
- ☐ **Oil Shale 190-3**
- ☐ **Oil Shale 190-13**
- ☒ **Water Permit:** Permit #43-8496
- ☐ **RDCC Review:**
- ☐ **Fee Surface Agreement**
- ☒ **Intent to Commingle**

**Commingle Approved****LOCATION AND SITING:**

- ☐ **R649-2-3.**
- Unit:** NATURAL BUTTES
- ☐ **R649-3-2. General**
- ☐ **R649-3-3. Exception**
- ☒ **Drilling Unit**
- Board Cause No:** Cause 173-14
- Effective Date:** 12/2/1999
- Siting:** Suspends General Siting
- ☒ **R649-3-11. Directional Drill**

**Comments:** Presite Completed

**Stipulations:**

- 3 - Commingle - ddoucet
- 5 - Statement of Basis - bhill
- 12 - Cement Volume (3) - ddoucet
- 15 - Directional - dmason
- 17 - Oil Shale 190-5(b) - dmason
- 25 - Surface Casing - hmadonald

**RECEIVED:** May. 19, 2011



GARY R. HERBERT  
*Governor*

GREGORY S. BELL  
*Lieutenant Governor*

## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER  
*Executive Director*

Division of Oil, Gas and Mining

JOHN R. BAZA  
*Division Director*

### Permit To Drill

\*\*\*\*\*

**Well Name:** NBU 1021-30D4BS

**API Well Number:** 43047515330000

**Lease Number:** ML 22793

**Surface Owner:** STATE

**Approval Date:** 5/19/2011

**Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

**Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

**Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

**Commingling:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

**General:**

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

**Conditions of Approval:**

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Surface casing shall be cemented to the surface.

Cement volume for the 4 1/2" production string shall be determined from actual hole diameter in order to place cement from the pipe setting depth back to 1970' MD minimum.

**Additional Approvals:**

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan – contact Dustin Doucet
- Significant plug back of the well – contact Dustin Doucet
- Plug and abandonment of the well – contact Dustin Doucet

**Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well – contact Carol Daniels  
OR  
submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at <http://oilgas.ogm.utah.gov>
- 24 hours prior to testing blowout prevention equipment - contact Dan Jarvis
- 24 hours prior to cementing or testing casing – contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program – contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well – contact Dan Jarvis

**Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 - office
- Dustin Doucet 801-538-5281 - office  
801-733-0983 - after office hours
- Dan Jarvis 801-538-5338 - office  
801-231-8956 - after office hours

**Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) – due within 5 days of spudding the well
- Monthly Status Report (Form 9) – due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) – due prior to implementation
- Written Notice of Emergency Changes (Form 9) – due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) – due prior to implementation
- Report of Water Encountered (Form 7) – due within 30 days after completion
- Well Completion Report (Form 8) – due within 30 days after completion or plugging

Approved By:

API Well No: 43047515330000

Approved by:

A handwritten signature in black ink, appearing to read "J. Rogers", written in a cursive style.

For John Rogers  
Associate Director, Oil & Gas

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
Submitted By ANDY LYTLE Phone Number 720.929.6100  
Well Name/Number NBU 1021-30D4BS  
Qtr/Qtr SEnw Section 30 Township 10S Range 21E  
Lease Serial Number ML 22793  
API Number 4304751533

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

Date/Time 08/05/2011 10:00 HRS AM ☐ PM ☐

Casing – Please report time casing run starts, not cementing times.

- ☒ Surface Casing  
☐ Intermediate Casing  
☐ Production Casing  
☐ Liner  
☐ Other

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AUG 04 2011

BUREAU OF OIL, GAS &amp; MINING

Date/Time 08/12/2011 00:00 HRS AM ☐ PM ☐

BOPE

- ☐ Initial BOPE test at surface casing point  
☐ BOPE test at intermediate casing point  
☐ 30 day BOPE test  
☐ Other

Date/Time \_\_\_\_\_ AM ☐ PM ☐

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT KENNY GATHINGS AT

435.828.0986 OR LOVEL YOUNG AT 435.781.7051

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22793
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1021-30D4BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1964 FNL 1950 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 30 Township: 10.0S Range: 21.0E Meridian: S		<b>9. API NUMBER:</b> 43047515330000
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> <b>ACIDIZE</b>	
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> <b>ALTER CASING</b>	
<input checked="" type="checkbox"/> <b>SPUD REPORT</b> Date of Spud: 8/6/2011	<input type="checkbox"/> <b>CASING REPAIR</b>	
<input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<input type="checkbox"/> <b>CHANGE TO PREVIOUS PLANS</b>	
	<input type="checkbox"/> <b>CHANGE TUBING</b>	
	<input type="checkbox"/> <b>CHANGE WELL STATUS</b>	
	<input type="checkbox"/> <b>COMMINGLE PRODUCING FORMATIONS</b>	
	<input type="checkbox"/> <b>DEEPEN</b>	
	<input type="checkbox"/> <b>FRACTURE TREAT</b>	
	<input type="checkbox"/> <b>OPERATOR CHANGE</b>	
	<input type="checkbox"/> <b>PLUG AND ABANDON</b>	
	<input type="checkbox"/> <b>PRODUCTION START OR RESUME</b>	
	<input type="checkbox"/> <b>RECLAMATION OF WELL SITE</b>	
	<input type="checkbox"/> <b>REPERFORATE CURRENT FORMATION</b>	
	<input type="checkbox"/> <b>SIDETRACK TO REPAIR WELL</b>	
	<input type="checkbox"/> <b>TUBING REPAIR</b>	
	<input type="checkbox"/> <b>VENT OR FLARE</b>	
	<input type="checkbox"/> <b>WATER SHUTOFF</b>	
	<input type="checkbox"/> <b>SI TA STATUS EXTENSION</b>	
	<input type="checkbox"/> <b>WILDCAT WELL DETERMINATION</b>	
	<input type="checkbox"/> <b>OTHER</b>	
	OTHER: <input style="width: 100px;" type="text"/>	
<b>12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.</b> MIRU PETE MARTIN BUCKET RIG. DRILLED 20" CONDUCTOR HOLE TO 40'. RAN 14" 36.7# SCHEDULE 10 PIPE. CMT W/28 SX READY MIX. SPUD WELL ON 08/06/2011 AT 0900 HRS.		
<b>Accepted by the          Utah Division of          Oil, Gas and Mining          FOR RECORD ONLY</b>		
<b>NAME (PLEASE PRINT)</b> Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 8/10/2011	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22793
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1021-30D4BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1964 FNL 1950 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 30 Township: 10.0S Range: 21.0E Meridian: S		<b>9. API NUMBER:</b> 43047515330000
<b>PHONE NUMBER:</b> 720 929-6515 Ext		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>COUNTY:</b> UINTAH		<b>STATE:</b> UTAH
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING	
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CASING REPAIR	
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 8/20/2011	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	
	<input type="checkbox"/> CHANGE WELL STATUS	
	<input type="checkbox"/> CHANGE WELL TYPE	
	<input type="checkbox"/> DEEPEN	
	<input type="checkbox"/> FRACTURE TREAT	
	<input type="checkbox"/> NEW CONSTRUCTION	
	<input type="checkbox"/> OPERATOR CHANGE	
	<input type="checkbox"/> PLUG AND ABANDON	
	<input type="checkbox"/> PLUG BACK	
	<input type="checkbox"/> PRODUCTION START OR RESUME	
	<input type="checkbox"/> RECLAMATION OF WELL SITE	
	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION	
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	
	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	
	<input type="checkbox"/> TEMPORARY ABANDON	
	<input type="checkbox"/> TUBING REPAIR	
	<input type="checkbox"/> VENT OR FLARE	
	<input type="checkbox"/> WATER DISPOSAL	
	<input type="checkbox"/> WATER SHUTOFF	
	<input type="checkbox"/> SI TA STATUS EXTENSION	
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
<b>12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.</b> MIRU AIR RIG ON AUGUST 17, 2011. DRILLED SURFACE HOLE TO 2170'. RAN SURFACE CASING AND CEMENTED. WELL IS WAITING ON ROTARY RIG. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH WELL COMPLETION REPORT.		
<b>Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY</b>		
<b>NAME (PLEASE PRINT)</b> Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 8/22/2011	

## BLM - Vernal Field Office - Notification Form

Operator KERR-McGEE OIL & GAS Rig Name/# BUCKET RIG  
Submitted By ANDY LYTLE Phone Number 720.929.6100  
Well Name/Number NBU 1021-30D4BS  
Qtr/Qtr SEnw Section 30 Township 10S Range 21E  
Lease Serial Number ML 22793  
API Number 4304751533

Spud Notice – Spud is the initial spudding of the well, not drilling out below a casing string.

Date/Time 08/05/2011 10:00 HRS AM ☐ PM ☐

Casing – Please report time casing run starts, not cementing times.

- ☒ Surface Casing  
☐ Intermediate Casing  
☐ Production Casing  
☐ Liner  
☐ Other

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AUG 04 2011

BUREAU OF OIL, GAS &amp; MINING

Date/Time 08/12/2011 00:00 HRS AM ☐ PM ☐

BOPE

- ☐ Initial BOPE test at surface casing point  
☐ BOPE test at intermediate casing point  
☐ 30 day BOPE test  
☐ Other

Date/Time \_\_\_\_\_ AM ☐ PM ☐

Remarks ESTIMATED DATE AND TIME. PLEASE CONTACT KENNY GATHINGS AT

435.828.0986 OR LOVEL YOUNG AT 435.781.7051

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

FORM 6

**ENTITY ACTION FORM**

Operator: KERR McGEE OIL & GAS ONSHORE LP  
Address: 1368 SOUTH 1200 EAST  
city VERNAL  
state UT zip 84078

Operator Account Number: N 2995  
Phone Number: (435) 781-7024

**Well 1**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751532	NBU 1021-30C4BS		SE	NW	30	10S	21E UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900	8/5/2011			8/18/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 08/05/2011 AT 1100 HRS <i>BHL= NENW</i>							

**Well 2**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751533	NBU 1021-30D4BS		SE	NW	30	10S	21E UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900	8/6/2011			8/18/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 08/06/2011 AT 0900 HRS. <i>BHL= NWNW</i>							

**Well 3**

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751534	NBU 1021-30E4BS		SE	NW	30	10S	21E UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date	
B	99999	2900	8/7/2011			8/18/11	
<b>Comments:</b> MIRU PETE MARTIN BUCKET RIG. <i>WSTMVD</i> SPUD WELL ON 08/07/2011 AT 0930 HRS. <i>BHL= SWNW</i>							

**ACTION CODES:**

- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (Explain in 'comments' section)

SHEILA WOPSOCK

Name (Please Print)

Signature

REGULATORY ANALYST

Title

8/10/2011

Date

(5/2000)

**RECEIVED**

**AUG 10 2011**

DIV. OF OIL, GAS & MINING

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>			
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22793			
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>			
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES			
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1021-30D4BS			
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1964 FNL 1950 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 30 Township: 10.0S Range: 21.0E Meridian: S		<b>9. API NUMBER:</b> 43047515330000			
<b>PHONE NUMBER:</b> 720 929-6515 Ext		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES			
<b>COUNTY:</b> UINTAH		<b>STATE:</b> UTAH			
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>					
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>				
<input checked="" type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start: 10/27/2011  <input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:  <input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:  <input type="checkbox"/> <b>DRILLING REPORT</b> Report Date:	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> ACIDIZE  <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS  <input type="checkbox"/> CHANGE WELL STATUS  <input checked="" type="checkbox"/> DEEPEN  <input type="checkbox"/> OPERATOR CHANGE  <input type="checkbox"/> PRODUCTION START OR RESUME  <input type="checkbox"/> REPERFORATE CURRENT FORMATION  <input type="checkbox"/> TUBING REPAIR  <input type="checkbox"/> WATER SHUTOFF  <input type="checkbox"/> WILDCAT WELL DETERMINATION         </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> ALTER CASING  <input type="checkbox"/> CHANGE TUBING  <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS  <input type="checkbox"/> FRACTURE TREAT  <input type="checkbox"/> PLUG AND ABANDON  <input type="checkbox"/> RECLAMATION OF WELL SITE  <input type="checkbox"/> SIDETRACK TO REPAIR WELL  <input type="checkbox"/> VENT OR FLARE  <input type="checkbox"/> SI TA STATUS EXTENSION  <input type="checkbox"/> OTHER         </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> CASING REPAIR  <input type="checkbox"/> CHANGE WELL NAME  <input type="checkbox"/> CONVERT WELL TYPE  <input type="checkbox"/> NEW CONSTRUCTION  <input type="checkbox"/> PLUG BACK  <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION  <input type="checkbox"/> TEMPORARY ABANDON  <input type="checkbox"/> WATER DISPOSAL  <input type="checkbox"/> APD EXTENSION            OTHER: <input style="width: 100px;" type="text"/> </td> </tr> </table>		<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>
<input type="checkbox"/> ACIDIZE <input checked="" type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input style="width: 100px;" type="text"/>			
<b>12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.</b>  The operator requests approval to change the total depth to include the Blackhawk formation. This request also includes changes to the production casing program to Ultra DQX/LTC, and the drilling program to allow for the use of a Closed Loop system (please refer to page 8 in the attachment). Included in the attached drilling plan you will find a request for a variance for FIT requirements (please refer to page 4 in the attachment). Thank you.					
<b>Approved by the Utah Division of Oil, Gas and Mining</b>  <b>Date:</b> 11/23/2011 <b>By:</b>					
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske		<b>PHONE NUMBER</b> 720 929-6304			
<b>SIGNATURE</b> N/A		<b>TITLE</b> Regulatory Analyst			
<b>DATE</b> 10/27/2011					

Well name:	<b>43047515330000 NBU 1021-30D4BS</b>	
Operator:	<b>KERR-MCGEE OIL &amp; GAS ONSHORE, L.P.</b>	
String type:	Production	Project ID: 43-047-51533
Location:	UINTAH COUNTY	

**Design parameters:****Collapse**

Mud weight: 13.000 ppg  
Internal fluid density: 2.330 ppg

**Minimum design factors:****Collapse:**

Design factor 1.125

**Burst:**

Design factor 1.00

**Environment:**

H2S considered? No  
Surface temperature: 74 °F  
Bottom hole temperature: 223 °F  
Temperature gradient: 1.40 °F/100ft  
Minimum section length: 100 ft

Cement top: 834 ft ✓

**Burst**

Max anticipated surface pressure: 4,852 psi → *Sum Bore*  
Internal gradient: 0.220 psi/ft  
Calculated BHP 7,196 psi

No backup mud specified.

**Tension:**

8 Round STC: 1.80 (J)  
8 Round LTC: 1.80 (J)  
Buttress: 1.60 (J)  
Premium: 1.50 (J)  
Body yield: 1.60 (B)

**Directional well information:**

Kick-off point: 300 ft  
Departure at shoe: 1603 ft  
Maximum dogleg: 2 °/100ft  
Inclination at shoe: 0 °

Tension is based on air weight.  
Neutral point: 8,899 ft

Estimated cost: 160,763 (\$)

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
2	5000	4.5	11.60	HCP-110	DQX	4687	5000	3.875	132000
1	5970	4.5	11.60	HCP-110	LT&C	10655	10970	3.875	28763

Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
2	2598	8012	3.084 ✓	5883	10690	1.82 ✓	123.6	367.2	2.97 B ✓
1	5906	8650	1.465 ✓	7196	10690	1.49 ✓	69.2	279	4.03 J ✓

Prepared by: Helen Sadik-Macdonald  
Div of Oil, Gas & Mining

Phone: 801 538-5357  
FAX: 801-359-3940

Date: November 23, 2011  
Salt Lake City, Utah

**Remarks:**

Collapse is based on a vertical depth of 10655 ft, a mud weight of 13 ppg. An internal gradient of .121 psi/ft was used for collapse from TD. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Engineering responsibility for use of this design will be that of the purchaser.

**RECEIVED** Oct. 27, 2011

NBU 1021-30D4BS

Drilling Program  
1 of 7**Kerr-McGee Oil & Gas Onshore. L.P.****NBU 1021-30D4BS**

Surface: 1964 FNL / 1950 FWL      SENW  
 BHL: 821 FNL / 829 FWL      NWNW

Section 30 T10S R21E

Unitah County, Utah  
 Mineral Lease: ST UT ML 22793

**ONSHORE ORDER NO. 1****DRILLING PROGRAM**

1. & 2. **Estimated Tops of Important Geologic Markers:**  
**Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations:**

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1,118'	
Birds Nest	1,343'	Water
Mahogany	1,751'	Water
Wasatch	4,351'	Gas
Mesaverde	7,383'	Gas
Sego	9,634'	Gas
Castlegate	9,670'	Gas
MN5	10,055'	Gas
TVD	10,655'	
TD	10,970'	

3. **Pressure Control Equipment** (Schematic Attached)

Please refer to the attached Drilling Program

4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

5. **Drilling Fluids Program:**

Please refer to the attached Drilling Program

**6. Evaluation Program:**

Please refer to the attached Drilling Program

**7. Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 10655' TVD, approximately equals  
 7,032 psi (0.66 psi/ft = actual bottomhole gradient)

---

Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

Maximum anticipated surface pressure equals approximately 4,737 psi (bottom hole pressure  
 minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot, per Onshore Order No. 2).

---

Per Onshore Order No. 2 - Max Anticipated Surf. Press.(MASP) = (Pore Pressure at next csg point-

(0.22 psi/ft-partial evac gradient x TVD of next csg point))

**8. Anticipated Starting Dates:**

Drilling is planned to commence immediately upon approval of this application.

**9. Variances:**

Please refer to the attached Drilling Program.

Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

**Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12 1/4 inch hole for the first 200 feet, then will drill a 11 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 11 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### **Variance for BOPE Requirements**

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### **Variance for Mud Material Requirements**

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

#### **Variance for Special Drilling Operation (surface equipment placement) Requirements**

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and

on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

**Variance for FIT Requirements**

KMG also respectfully requests a variance to Onshore Order 2, Section III, Part Bi, for the pressure integrity test (PIT, also known as a formation integrity test (FIT)). This well is not an exploratory well and is being drilled in an area where the formation integrity is well known. Additionally, when an FIT is run with the mud weight as required, the casing shoe frequently breaks down and causes subsequent lost circulation when drilling the entire depth of the well.

**Conclusion**

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

**10. Other Information:**

Please refer to the attached Drilling Program.



NBU 1021-30D4BS

Drilling Program  
6 of 7

## KERR-McGEE OIL & GAS ONSHORE LP

### DRILLING PROGRAM

**CASING PROGRAM**

						DESIGN FACTORS			
						LTC		DQX	
	SIZE	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'							
							3,390	1,880	348,000
SURFACE	8-5/8"	0	to 2,140	28.00	IJ-55	LTC	2.51	1.88	6.63
							10,690	8,650	279,000
PRODUCTION	4-1/2"	0	to 5,000	11.60	HCP-110	DQX	1.19	1.20	3.60
	4-1/2"	5,000	to 10,970'	11.60	HCP-110	LTC	1.19	1.20	5.03

**Surface Casing:**

(Burst Assumptions: TD = 13.0 ppg)

0.73 psi/ft = frac gradient @ surface shoe

Fracture at surface shoe with 0.1 psi/ft gas gradient above

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

**Production casing:**

(Burst Assumptions: Pressure test with 8.4ppg @ 9000 psi)

0.66 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW)

(Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

**CEMENT PROGRAM**

		FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT		YIELD
SURFACE	LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80		1.15
Option 1			+ 0.25 pps flocele					
	TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80		1.15
			+ 2% CaCl + 0.25 pps flocele					
SURFACE		<b>NOTE: If well will circulate water to surface, option 2 will be utilized</b>						
Option 2	LEAD	1,640'	65/35 Poz + 6% Gel + 10 pps gilsonite	150	35%	11.00		3.82
			+ 0.25 pps Flocele + 3% salt BWOW					
	TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80		1.15
			+ 0.25 pps flocele					
	TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80		1.15
PRODUCTION	LEAD	3,850'	Premium Lite II +0.25 pps	290	20%	11.00		3.38
			celloflake + 5 pps gilsonite + 10% gel					
			+ 0.5% extender					
	TAIL	7,120'	50/50 Poz/G + 10% salt + 2% gel	1,680	35%	14.30		1.31
			+ 0.1% R-3					

\*Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

\*Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

**FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE	Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe
PRODUCTION	Float shoe, 1 jt, float collar. No centralizers will be used.

**ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.

Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

**DRILLING ENGINEER:**

Nick Spence / Danny Showers / Chad Loesel

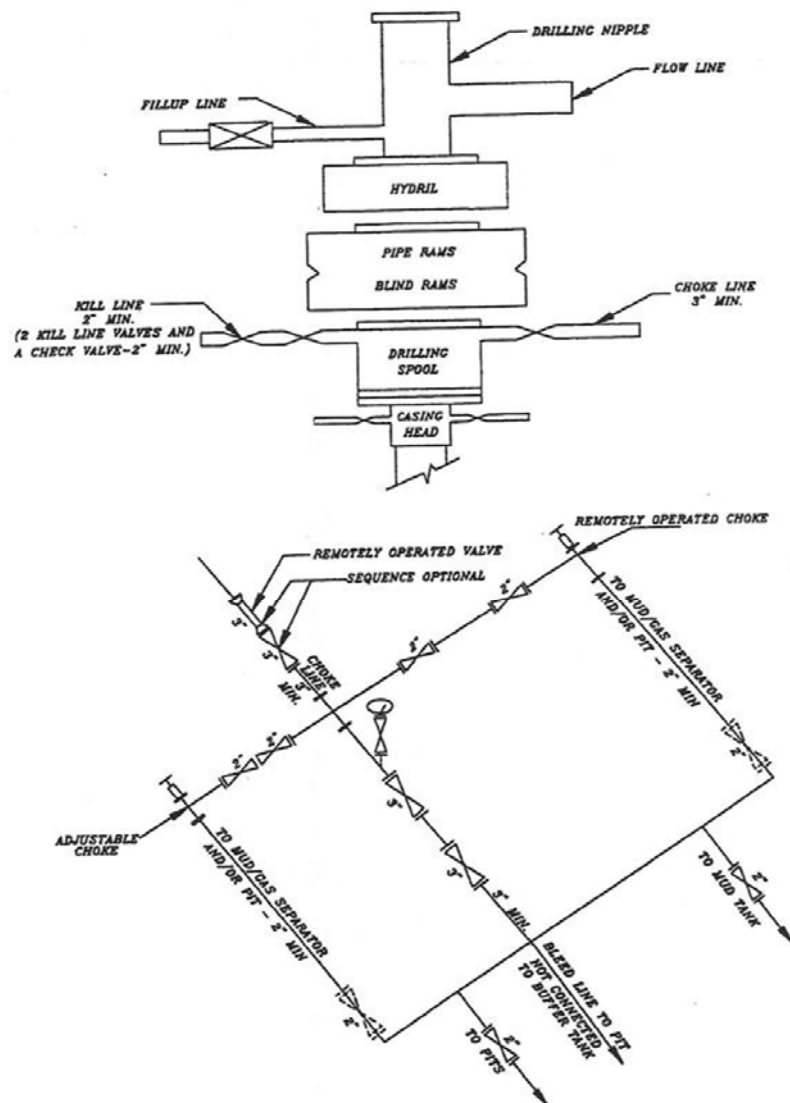
DATE:

**DRILLING SUPERINTENDENT:**

Kenny Gathings / Lovel Young

DATE:

**RECEIVED** Oct. 27, 2011

**EXHIBIT A**  
**NBU 1021-30D4BS****SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK**

Requested Drilling Options:

Kerr-McGee will use either a closed loop drilling system that will require one pit and one cuttings storage area to be constructed on the drilling pad or a traditional drilling operation with one pit used for drilling and completion operations. The cuttings storage area will be used to contain only the de-watered drill cuttings and will be lined and bermed to prevent any liquid runoff. The drill cuttings will be buried in the completion pit once completion operations are completed according to traditional pit closure standards. The pit will be constructed to allow for completion operations. The completion operations pit will be lined with a synthetic material 20 mil or thicker and will be used for the completing of the wells on the pad or used as part of our Aandarko Completions Transportation System (ACTS). Using the closed loop drilling system will allow Kerr-McGee to decrease the amount of disturbance/footprint on location compared to a single large drilling/completions pit.

If Kerr-McGee does not use a closed loop drilling system, it will construct a traditional drilling/completions pit to contain drill cuttings and for use in completion operations. The pit will be lined with a synthetic material 20 mil or thicker. The drill cuttings will be buried in the pit using traditional pit closure standards.

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22793
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1021-30D4BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1964 FNL 1950 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 30 Township: 10.0S Range: 21.0E Meridian: S		<b>9. API NUMBER:</b> 43047515330000
<b>PHONE NUMBER:</b> 720 929-6515 Ext		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>COUNTY:</b> UINTAH		<b>STATE:</b> UTAH
<b>11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA</b>		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> <b>NOTICE OF INTENT</b> Approximate date work will start:	<input type="checkbox"/> <b>ACIDIZE</b>	
<input type="checkbox"/> <b>SUBSEQUENT REPORT</b> Date of Work Completion:	<input type="checkbox"/> <b>ALTER CASING</b>	
<input type="checkbox"/> <b>SPUD REPORT</b> Date of Spud:	<input type="checkbox"/> <b>CASING REPAIR</b>	
<input checked="" type="checkbox"/> <b>DRILLING REPORT</b> Report Date: 12/15/2011	<input type="checkbox"/> <b>CHANGE TO PREVIOUS PLANS</b>	
	<input type="checkbox"/> <b>CHANGE WELL STATUS</b>	
	<input type="checkbox"/> <b>CHANGE WELL TYPE</b>	
	<input type="checkbox"/> <b>DEEPEN</b>	
	<input type="checkbox"/> <b>FRACTURE TREAT</b>	
	<input type="checkbox"/> <b>NEW CONSTRUCTION</b>	
	<input type="checkbox"/> <b>OPERATOR CHANGE</b>	
	<input type="checkbox"/> <b>PLUG AND ABANDON</b>	
	<input type="checkbox"/> <b>PLUG BACK</b>	
	<input type="checkbox"/> <b>PRODUCTION START OR RESUME</b>	
	<input type="checkbox"/> <b>RECLAMATION OF WELL SITE</b>	
	<input type="checkbox"/> <b>RECOMPLETE DIFFERENT FORMATION</b>	
	<input type="checkbox"/> <b>REPERFORATE CURRENT FORMATION</b>	
	<input type="checkbox"/> <b>SIDETRACK TO REPAIR WELL</b>	
	<input type="checkbox"/> <b>TEMPORARY ABANDON</b>	
	<input type="checkbox"/> <b>TUBING REPAIR</b>	
	<input type="checkbox"/> <b>VENT OR FLARE</b>	
	<input type="checkbox"/> <b>WATER DISPOSAL</b>	
	<input type="checkbox"/> <b>WATER SHUTOFF</b>	
	<input type="checkbox"/> <b>SI TA STATUS EXTENSION</b>	
	<input type="checkbox"/> <b>APD EXTENSION</b>	
	<input type="checkbox"/> <b>WILDCAT WELL DETERMINATION</b>	
	<input type="checkbox"/> <b>OTHER:</b> <input style="width: 100px;" type="text"/>	
<b>12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.</b> MIRU ROTARY RIG. FINISHED DRILLING FROM 2170' TO 10,054' ON DEC. 11, 2011. RAN 4-1/2" 11.6# P-110 PRODUCTION CASING. CEMENTED PRODUCTION CASING. RELEASED H&P RIG 311 ON DEC. 15, 2011 @ 06:00 HRS. DETAILS OF CEMENT JOB WILL BE INCLUDED WITH THE WELL COMPLETION REPORT. WELL IS WAITING ON FINAL COMPLETION ACTIVITIES.		
<b>NAME (PLEASE PRINT)</b> Jaime Scharnowske	<b>PHONE NUMBER</b> 720 929-6304	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 12/19/2011	

<b>STATE OF UTAH</b> DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		<b>FORM 9</b>
<b>SUNDRY NOTICES AND REPORTS ON WELLS</b>  Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		<b>5. LEASE DESIGNATION AND SERIAL NUMBER:</b> ML 22793
<b>1. TYPE OF WELL</b> Gas Well		<b>6. IF INDIAN, ALLOTTEE OR TRIBE NAME:</b>
<b>2. NAME OF OPERATOR:</b> KERR-MCGEE OIL & GAS ONSHORE, L.P.		<b>7. UNIT or CA AGREEMENT NAME:</b> NATURAL BUTTES
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th Street, Suite 600, Denver, CO, 80217 3779		<b>8. WELL NAME and NUMBER:</b> NBU 1021-30D4BS
<b>4. LOCATION OF WELL</b> <b>FOOTAGES AT SURFACE:</b> 1964 FNL 1950 FWL <b>QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:</b> Qtr/Qtr: SENW Section: 30 Township: 10.0S Range: 21.0E Meridian: S		<b>9. API NUMBER:</b> 43047515330000
<b>PHONE NUMBER:</b> 720 929-6514		<b>9. FIELD and POOL or WILDCAT:</b> NATURAL BUTTES
<b>COUNTY:</b> UINTAH		<b>STATE:</b> UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
<b>TYPE OF SUBMISSION</b>	<b>TYPE OF ACTION</b>	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start:	<input type="checkbox"/> ACIDIZE	
<input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion:	<input type="checkbox"/> ALTER CASING	
<input type="checkbox"/> SPUD REPORT Date of Spud:	<input type="checkbox"/> CASING REPAIR	
<input checked="" type="checkbox"/> DRILLING REPORT Report Date: 2/7/2012	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	
	<input type="checkbox"/> CHANGE WELL STATUS	
	<input type="checkbox"/> CHANGE WELL NAME	
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	
	<input type="checkbox"/> CONVERT WELL TYPE	
	<input type="checkbox"/> DEEPEN	
	<input type="checkbox"/> FRACTURE TREAT	
	<input type="checkbox"/> NEW CONSTRUCTION	
	<input type="checkbox"/> OPERATOR CHANGE	
	<input type="checkbox"/> PLUG AND ABANDON	
	<input type="checkbox"/> PLUG BACK	
	<input checked="" type="checkbox"/> PRODUCTION START OR RESUME	
	<input type="checkbox"/> RECLAMATION OF WELL SITE	
	<input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION	
	<input type="checkbox"/> REPERFORATE CURRENT FORMATION	
	<input type="checkbox"/> SIDETRACK TO REPAIR WELL	
	<input type="checkbox"/> TEMPORARY ABANDON	
	<input type="checkbox"/> TUBING REPAIR	
	<input type="checkbox"/> VENT OR FLARE	
	<input type="checkbox"/> WATER DISPOSAL	
	<input type="checkbox"/> WATER SHUTOFF	
	<input type="checkbox"/> SI TA STATUS EXTENSION	
	<input type="checkbox"/> WILDCAT WELL DETERMINATION	
	<input type="checkbox"/> OTHER: <input style="width: 100px;" type="text"/>	
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. THE SUBJECT WELL WAS PLACED ON PRODUCTION ON 02/07/2012 AT 1510 HRS. THE CHRONOLOGICAL WELL HISTORY WILL BE SUBMITTED WITH THE WELL COMPLETION REPORT.		
Accepted by the Utah Division of Oil, Gas and Mining <b>FOR RECORD ONLY</b> February 08, 2012		
<b>NAME (PLEASE PRINT)</b> Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	<b>TITLE</b> Regulatory Analyst
<b>SIGNATURE</b> N/A	<b>DATE</b> 2/8/2012	

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

AMENDED REPORT ☐ FORM 8  
(highlight changes)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> DRY <input type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER: ML 22793
b. TYPE OF WORK: NEW WELL <input checked="" type="checkbox"/> HORIZ. LATS. <input type="checkbox"/> DEEP-EN <input type="checkbox"/> RE-ENTRY <input type="checkbox"/> DIFF. RESVR. <input type="checkbox"/> OTHER _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
2. NAME OF OPERATOR: KERR MCGEE OIL & GAS ONSHORE, L.P.		7. UNIT or CA AGREEMENT NAME UTU63047A
3. ADDRESS OF OPERATOR: P.O. BOX 173779 CITY DENVER STATE CO ZIP 80217		8. WELL NAME and NUMBER: NBU 1021-30D4BS
PHONE NUMBER: (720) 929-6304		9. API NUMBER: 4304751533
4. LOCATION OF WELL (FOOTAGES) AT SURFACE: SENW 1964FNL 1950FWL S30,T10S,R21E AT TOP PRODUCING INTERVAL REPORTED BELOW: NWNW 790 FNL 807 FWL S30,T10S,R21E AT TOTAL DEPTH: NWNW 837 FNL 822 FWL S30,T10S,R21E <i>BHL by H&amp;M</i>		10 FIELD AND POOL, OR WILDCAT NATURAL BUTTES
11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: SENW 30 10S 21E S		12. COUNTY UINTAH
13. STATE UTAH		14. DATE SPUDDED: 8/6/2011
15. DATE T.D. REACHED: 12/11/2011		16. DATE COMPLETED: 2/7/2012
ABANDONED <input type="checkbox"/> READY TO PRODUCE <input checked="" type="checkbox"/>		17. ELEVATIONS (DF, RKB, RT, GL): 5262 GL
18. TOTAL DEPTH: MD 10,054 TVD 9,708	19. PLUG BACK T.D.: MD 10,021 TVD 9,675	20. IF MULTIPLE COMPLETIONS, HOW MANY? *
22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each) <u>SYNTHETIC TRIPLE COMBO-RSL/SM-CBL/GR/COLLARS/TEMP-BHV-SD/DSN/ACTR</u>		23. WAS WELL CORED? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit analysis) WAS DST RUN? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (Submit report) DIRECTIONAL SURVEY? NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> (Submit copy)

24. CASING AND LINER RECORD (Report all strings set in well)

HOLE SIZE	SIZE/GRADE	WEIGHT (#/ft.)	TOP (MD)	BOTTOM (MD)	STAGE CEMENTER DEPTH	CEMENT TYPE & NO. OF SACKS	SLURRY VOLUME (BBL)	CEMENT TOP **	AMOUNT PULLED
20"	14" STL	36.7#	0	40		28			
11"	8 5/8" IJ-55	28#	0	2,157		610		0	
7 7/8"	4 1/2" P-110	11.6#	0	10,064		1,612		1750	

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25. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	9,456							

26. PRODUCING INTERVALS

FORMATION NAME	TOP (MD)	BOTTOM (MD)	TOP (TVD)	BOTTOM (TVD)	INTERVAL (Top/Bot - MD)	SIZE	NO. HOLES	PERFORATION STATUS
(A) WASATCH	6,440	7,524			6,440 7,524	0.36	30	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(B) MESAVERDE	7,756	9,898			7,756 9,898	0.36	162	Open <input checked="" type="checkbox"/> Squeezed <input type="checkbox"/>
(C)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>
(D)								Open <input type="checkbox"/> Squeezed <input type="checkbox"/>

28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND TYPE OF MATERIAL
6440-9898	PUMP 7,849 BBLS SLICK H2O & 174,635 # 30/50 OTTAWA SAND
	8 STAGES

29. ENCLOSED ATTACHMENTS:

- ☐ ELECTRICAL/MECHANICAL LOGS ☐ GEOLOGIC REPORT ☐ DST REPORT ☒ DIRECTIONAL SURVEY  
☐ SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION ☐ CORE ANALYSIS ☐ OTHER: \_\_\_\_\_

30. WELL STATUS:

PROD

## 31. INITIAL PRODUCTION

## INTERVAL A (As shown in Item #26)

DATE FIRST PRODUCED: 2/7/2012		TEST DATE: 2/16/2012		HOURS TESTED: 24		TEST PRODUCTION RATES: →		OIL – BBL: 0		GAS – MCF: 1,064		WATER – BBL: 342		PROD. METHOD: FLOWING							
CHOKE SIZE: 24/64		TBG. PRESS. 603		CSG. PRESS. 1,225		API GRAVITY		BTU – GAS		GAS/OIL RATIO		24 HR PRODUCTION RATES: →		OIL – BBL: 0		GAS – MCF: 1,064		WATER – BBL: 342		INTERVAL STATUS: PROD	

## INTERVAL B (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

## INTERVAL C (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

## INTERVAL D (As shown in Item #26)

DATE FIRST PRODUCED:		TEST DATE:		HOURS TESTED:		TEST PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS – MCF:	WATER – BBL:	INTERVAL STATUS:

## 32. DISPOSITION OF GAS (Sold, Used for Fuel, Vented, Etc.)

## 33. SUMMARY OF POROUS ZONES (Include Aquifers):

Show all important zones of porosity and contents thereof. Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

## 34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
				GREEN RIVER	1,107
				BIRD'S NEST	1,383
				MAHOGANY	1,845
				WASATCH	4,709
				MESAVERDE	7,726

## 35. ADDITIONAL REMARKS (Include plugging procedure)

The first 210' of the surface hole was drilled with a 12 1/4" bit. The remainder of surface hole was drilled with an 11" bit. DQX csg was run from surface to 5008'; LTC csg was run from 5008' to 10,064'.

## 36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

NAME (PLEASE PRINT) JAIME SCHARNOWSKETITLE REGULATORY ANALYSTSIGNATURE Jaime ScharnowskeDATE 3/23/2012

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top – Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to: Utah Division of Oil, Gas and Mining  
1594 West North Temple, Suite 1210  
Box 145801  
Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011		Spud Date: 8/17/2011	
Project: UTAH-UINTAH		Site: NBU 1021-30F PAD			Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING		Start Date: 7/25/2011		End Date: 12/15/2011	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)			UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/17/2011	12:00 - 13:00	1.00	MIRU	01	C	P		MOVE RIG IN OFF THE NBU 1021-30C4BS
	13:00 - 17:30	4.50	MIRU	01	B	P		DRESS CONDUCTOR, INSTALL BLOOIE LINE,CENTER RIG OVER HOLE,R/U & PRIME MUD PUMP & RESERVE PIT PUMP
	17:30 - 18:00	0.50	DRLSUR	06	A	P		P/U 1.83 DEG BENT HOUSING HUNTING MTR SN 8021 . 7/8 LOBE .17 RPM. M/U 12 1/4" QD507 SN 7133232 3RD RUN, W/ 7-18'S. INSTALL RUBBER
	18:00 - 19:30	1.50	DRLSUR	02	B	P		SPUD SURFACE 08/17/2011 @ 18:00 HRS. DRILL 12 1/4" SURFACE HOLE F/40'-210' (170' @ 113'/HR)
	19:30 - 20:00	0.50	DRLSUR	06	A	P		PSI ON/ OFF 750/500, UP/ DOWN/ ROT 27/22/25. 532 GPM, 45 RPM ON TOP DRIVE, 15-18K WOB
	20:00 - 21:30	1.50	ALL	08	A	Z		TOH,L/D 12 1/4" BIT
8/18/2011	21:30 - 0:00	2.50	ALL	06	A	P		LAY DERRICK OVER TO TIGHTEN HAMMER UION ON PACKING HOUSING.
	0:00 - 0:30	0.50	DRLSUR	06	D	P		P/U DIR. TOOLS & SCRIBE, TIH T/210'
	0:30 - 6:00	5.50	DRLSUR	02	C	P		TIH WITH 11" BIT & DIR TOOLS
	6:00 - 6:30	0.50	DRLSUR	23		P		DRILL 11" SURFACE HOLE F/210'-830' (470' @ 117'/HR) PSI ON/ OFF 1020/850, UP/ DOWN/ ROT 50/45/48. 532 GPM, 45 RPM ON TOP DRIVE, 15-18K WOB
	6:30 - 8:00	1.50	DRLSUR	02	C	P		HELD S/M
	8:00 - 8:30	0.50	DRLSUR	23		Z		DRILL 11" SURFACE HOLE F/830'-1'040' (930' @ 117'/HR) PSI ON/ OFF 1020/850, UP/ DOWN/ ROT 50/45/48. 532 GPM, 45 RPM ON TOP DRIVE, 15-18K WOB
	8:30 - 16:30	8.00	DRLSUR	02	C	P		HELD STAND DOWN S/M WITH PRO PERO SAFTY MAN / FOUCE ON THE ACCIDENTS PERVENTION. WITH RIG PERSONNEL.
	16:30 - 18:00	1.50	DRLSUR	22	A	X		DRILL 11" SURFACE HOLE F/1'040'-1740' (930' @ 87.5'/HR) PSI ON/ OFF 1020/850, UP/ DOWN/ ROT 50/45/48. 532 GPM, 45 RPM ON TOP DRIVE, 15-18K WOB.
	18:00 - 22:30	4.50	DRLSUR	08	A	Z		STUCK IN HOLE @ 1740' NO RETURNS, HOOK UP AIR PACKAGE.@ 1250 CFM HIGH 1170 LOW,AND ATTEMPT TO GET FREE.
	22:30 - 0:00	1.50	DRLSUR	22	A	X		BLOWED 2 HYD LINE ON RIG HYD TANK. PULL IT OUT AND WAIT ON PARTS. CHANGED OUT AIR BOOSTER.
8/19/2011	0:00 - 1:30	1.50	DRLSUR	03	A	P		STUCK IN HOLE @ 1740' NO RETURNS, HOOK UP AIR PACKAGE.@ 1250 CFM HIGH 1170 LOW,AND ATTEMPT TO GET FREE.
	1:30 - 3:00	1.50	DRLSUR	02	C	P		GOT UNSTUCK L/D 2 JNT,CIRC AND REAM IN TO 1740' PUMP POLLY SWEEPS.
	3:00 - 4:00	1.00	DRLSUR	03	A	X		DRILL 11" SURFACE HOLE F/1760'-1820' (40' @ 86'/HR) PSI ON/ OFF 1500/1370, UP/ DOWN/ ROT 70/60/65. 136 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRCULATING RESERVE PIT

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011		Spud Date: 8/17/2011	
Project: UTAH-UINTAH		Site: NBU 1021-30F PAD			Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING		Start Date: 7/25/2011		End Date: 12/15/2011	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0			

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	4:00 - 6:00	2.00	DRLSUR	02	C	P		DRILL 11" SURFACE HOLE F/1820'-1940' (120' @ 60'/HR) PSI ON/ OFF 1500/1370, UP/ DOWN/ ROT 70/60/65. 136 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRCULATING RESERVE PIT
	6:00 - 10:00	4.00	DRLSUR	02	C	P		DRILL 11" SURFACE HOLE F/1940'-2170 TD (230' @ 57.5'/HR) PSI ON/ OFF 1500/1370, UP/ DOWN/ ROT 70/60/65. 136 SPM, 532 GPM, 18-20K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRCULATING RESERVE PIT
	10:00 - 12:00	2.00	DRLSUR	05	C	P		CIRC & COND HOLE F/LD & 8 5/8" 28# SURF. CSG RUN
	12:00 - 15:00	3.00	DRLSUR	06	D	P		L/D DRILLSTRING,11" BHA & DIR TOOLS
	15:00 - 16:00	1.00	DRLSUR	12	C	P		R/U T /RUN 8 5/8" 28# LT&C SURF. CSG, MOVE CATWALK AND PIPE RACKS, MOVE CSG OVER TO WORK AREA
	16:00 - 18:00	2.00	DRLSUR	12	C	P		RUN 48 JOINTS 8.625 28# J55 SURFACE CASING SHOE AT 2140' BAFFLE AT 2092 DISPLACEMENT WT.OF CASING 70 K.
	18:00 - 0:00	6.00	DRLSUR	12	E	P		HOLD SAFETY MEETING. INSTALL CEMENT HEAD. PSI TEST TO 2000 PSI. PUMP 115 BBLS OF 8.3# H2O AHEAD. FULL CIRC. PUMP 20 BBLS OF 8.4# GEL WATER AHEAD. PUMP 160 SX(108.8 BBLS) 11# 3.82 YIELD LEAD CEMENT, PUMP 200 SX (40.9 BBLS) OF 15.8# 1.15 YIELD TAIL(2% CALC, 1/4# /SK OF FLOCELE). FULL CIRC. DROP PLUG ON FLY AND DISPLACE W/1585 BBLS OF 8.3# H2O. LIFT PRESSURE WAS 400 PSI, BUMP PLUG AND HOLD 800 PSI FOR 5 MIN. FLOAT HELD.
								TOP OUT, PUMP 100 SX (20 BBLS) OF 15.8# 1.15 YIELD TAIL(4 % CALC, 1/4# /SK OF FLOCELE) DOWN 1" PUMP 150 SKS DOWN BACK SIDE.CMT. STAYED AT SURFACE. RIG DOWN CEMENTERS AND RELEASE. RIG @00:00 / 08/20/2011
12/5/2011	20:00 - 21:00	1.00	MIRU	01	C	P		SKID RIG IN OFF THE NBU 1021-30F4BS CENTER RIG OVER HOLE
	21:00 - 23:00	2.00	MIRU	14		P		NIPPLE UP BOPE,CHKOE LINE & STRATA MPD DRLG EQUIP
	23:00 - 0:00	1.00	MIRU	15	A	P		HOLD SAFETY MEETING, RU QUICK TEST START T/ PRESS TEST THE BOP, TIW, DART VALVE, BOP VALVES, CHOKE VALVES, KILL LINE AND STRATA LINES TO 250 PSI LOW/5MIN AND 5000 PSI HIGH/10 MIN. TESTED THE ANNULAR T/250 PSI LOW & 2500 PSI HIGH,8 5/8" SURF. CSG T/1500 PSI 30 MIN (OK)
12/6/2011	0:00 - 5:30	5.50	DRLPRO	15	A	P		CONT T/ PRESS TEST THE BOP, TIW, DART VALVE, BOP VALVES, CHOKE VALVES, KILL LINE AND STRATA LINES TO 250 PSI LOW/5MIN AND 5000 PSI HIGH/10 MIN. TESTED THE ANNULAR T/250 PSI LOW & 2500 PSI HIGH,8 5/8" SURF. CSG T/1500 PSI 30 MIN (OK)R/D TESTER
	5:30 - 7:00	1.50	DRLPRO	06	A	P		INSTALL WEAR BUSHING,P/U HUNTING 6 1/2" 1.5 FB .21 RPG MM,MU Q506F 77/8" BIT W/3x14S & 3X15s JETS,P/U DIR TOOLS & SCRIBE

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE	Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD	Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING	Start Date: 7/25/2011	End Date: 12/15/2011
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/NW/0/1950/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:00 - 11:30	4.50	DRLPRO	06	A	P		TIH T/1981'(STEAM ICE PLUGS OUT OF THE END OF DP)
	11:30 - 12:00	0.50	DRLPRO	07	A	P		SERVICE RIG
	12:00 - 12:30	0.50	DRLPRO	09	A	P		CUT & SLIP 82' DRILLING LINE
	12:30 - 13:00	0.50	DRLPRO	06	A	P		INSTALL STRATA ROT. HEAD,CONT TIH,TAG CEMENT @ 2040'
	13:00 - 16:00	3.00	DRLPRO	02	F	P		DRILL OUT CEMENT & BAFFLE F/2040' T/2140'
	16:00 - 17:00	1.00	ALL	22	L	Z		SEALS FAILED IN STRATA MPD ROT. HEAD,REPLACE ROT. HEAD
	17:00 - 18:00	1.00	DRLPRO	02	F	P		CONT T/DRILL CEMENT,FLOAT SHOE @ RATHOLE T/2161'
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILL 77/8" PROD HOLE F/2161' T/ 2737 576' @96 FPH WOB 20T/ 25K, HOOK LOAD PU 106K SO 76K ROT 90K ON BOTTOM PUMP PRESS,1700 PSI OFF BOTTOM PUMP PRESS,1325 PSI ON/OFF BOTTOM TORQUE8K/4K. MM RPM 113, TOPDRIVE RPM,45/55 PUMP 1/2 60/60 SPM, 540 GPM., DIFF PRESS. 250-400 PSI MUD 8.4 PPG MW 26 VIS
12/7/2011	0:00 - 17:00	17.00	DRLPRO	02	D	P		DRILL 439' SLIDE 137'
								DRILL 77/8" PROD HOLE F/2737' T/ 4340 1603' @94.2 FPH WOB 20T/ 25K, HOOK LOAD PU 106K SO 76K ROT 90K ON BOTTOM PUMP PRESS,1700 PSI OFF BOTTOM PUMP PRESS,1325 PSI ON/OFF BOTTOM TORQUE8K/4K. MM RPM 113, TOPDRIVE RPM,45/55 PUMP 1/2 60/60 SPM, 540 GPM., DIFF PRESS. 250-400 PSI MUD 8.4 PPG MW 26 VIS
	17:00 - 17:30	0.50	DRLPRO	07	A	P		DRILL ' SLIDE '
	17:30 - 0:00	6.50	DRLPRO	02	D	P		RIG SERVICE
								DRILLED 4340 T/ 5160', 820'/ 6.5 HRS, 126.1 FPH WOB 25K, HOOK LOAD PU 171K SO 97K ROT 125K OFF BOTTOM PUMP PRESS.1575# ON BOTTOM PUMP PRESS. 1830# OFF/ON BOTTOM TORQUE 9/10K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM., DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS
								DRILL 715' SLIDE 105',

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD		Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING	Start Date: 7/25/2011	End Date: 12/15/2011	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/8/2011	0:00 - 17:30	17.50	DRLPRO	02	D	P		DRILLED 5160' T/ 6887', 1727'/ 17.5 HRS, 98.6 FPH WOB 25K, HOOK LOAD PU 180K SO 100K ROT 140K OFF BOTTOM PUMP PRESS.1575# ON BOTTOM PUMP PRESS. 1830# OFF/ON BOTTOM TORQUE 9/10K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM,. DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS DRILL 1635' SLIDE 92', RIG SERVICE
	17:30 - 18:00	0.50	DRLPRO	07	A	P		
	18:00 - 0:00	6.00	DRLPRO	02	D	P		DRILLED 6887' T/ 7300', 413'/ 6 HRS, 68.8 FPH WOB 25K, HOOK LOAD PU 235K SO 118K ROT 158K OFF BOTTOM PUMP PRESS.1800# ON BOTTOM PUMP PRESS. 1950# OFF/ON BOTTOM TORQUE 17/15K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM,. DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS DRILL 413' SLIDE 0',
12/9/2011	0:00 - 16:00	16.00	DRLPRO	02	D	P		DRILLED 7300' T/ 8306', 1006'/ 16 HRS, 62.8 FPH WOB 25K, HOOK LOAD PU 235K SO 118K ROT 158K OFF BOTTOM PUMP PRESS.1800# ON BOTTOM PUMP PRESS. 1950# OFF/ON BOTTOM TORQUE 17/15K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM,. DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS DRILL 955' SLIDE 51', RIG SERVICE
	16:00 - 16:30	0.50	DRLPRO	07	A	P		
	16:30 - 0:00	7.50	DRLPRO	02	D	P		DRILLED 8306' T/ 8629', 323'/ 6 HRS, 43.0 FPH WOB 25K, HOOK LOAD PU 285K SO 125K ROT 176K OFF BOTTOM PUMP PRESS.2100# ON BOTTOM PUMP PRESS. 2450# OFF/ON BOTTOM TORQUE 21/21K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM,. DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS DRILL 413' SLIDE 68',

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011		Spud Date: 8/17/2011	
Project: UTAH-UINTAH		Site: NBU 1021-30F PAD			Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING		Start Date: 7/25/2011		End Date: 12/15/2011	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)			UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1984/NW/0/1950/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/10/2011	0:00 - 15:30	15.50	DRLPRO	02	D	P		DRILLED8629' T/ 9435', 806'/15.5 HRS, 52 FPH WOB 25K, HOOK LOAD PU 285K SO 125K ROT 176K OFF BOTTOM PUMP PRESS.2100# ON BOTTOM PUMP PRESS. 2450# OFF/ON BOTTOM TORQUE 21/21K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM., DIFF PRESS. 250-400# MUD 8.4 MW 26 VIS DRILL 806' SLIDE 0', RIG SERVICE
	15:30 - 16:00	0.50	DRLPRO	07	A	P		
	16:00 - 0:00	8.00	DRLPRO	02	D	P		DRILLED9435' T/ 9748', 313/8 HRS, 39 FPH WOB 25K, HOOK LOAD PU 337K SO 130K ROT 191K OFF BOTTOM PUMP PRESS.2500# ON BOTTOM PUMP PRESS. 2750# OFF/ON BOTTOM TORQUE 25/25K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM., DIFF PRESS. 250-400# MUD 9.9 MW37 VIS DRILL 313' SLIDE 0',
12/11/2011	0:00 - 9:00	9.00	DRLPRO	02	D	P		DRILLED9748' T/ 10054', 306' 9 HRS, 34 FPH WOB 25K, HOOK LOAD PU 337K SO 130K ROT 191K OFF BOTTOM PUMP PRESS.2500# ON BOTTOM PUMP PRESS. 2750# OFF/ON BOTTOM TORQUE 25/25K. MM/ 112 RPM,45 TD/ 157 RPM PUMP 1/2 60/60 SPM, 530 GPM., DIFF PRESS. 250-400# MUD 10 MW37 VIS DRILL 306' SLIDE 0', CIRC. COND. HOLE FOR TRIP TO SHOE
	9:00 - 11:00	2.00	DRLPRO	05	C	P		CHECK FOR FLOW
	11:00 - 11:30	0.50	DRLPRO	05	J	P		TOOH TO SHOE ( TIGHT HOLE) PUMP OUT
	11:30 - 13:30	2.00	DRLPRO	06	E	P		RIG SERVICE
	13:30 - 14:00	0.50	DRLPRO	07	A	P		TOOH TO SHOE ( TIGHT HOLE) PUMP OU
	14:00 - 21:30	7.50	DRLPRO	06	E	P		BLOW DOWN LINES TRY TO FINISH TRIP OUT
	21:30 - 22:00	0.50	DRLPRO	05	J	P		TOOH
	22:00 - 23:00	1.00	DRLPRO	06	E	P		CHECK FOR FLOW AT SHOE
	23:00 - 23:30	0.50	DRLPRO	05	J	P		TIH TIGHT @ 3984
	23:30 - 0:00	0.50	DRLPRO	06	E	P		TIH, WASH & SLIDE EVERY STAND DOWN
	0:00 - 8:30	8.50	DRLPRO	06	E	P		CIRC. AND CONDICTION HOLE BUILD MUD TO 11#
	8:30 - 13:30	5.00	DRLPRO	05	C	P		40 VIS
	13:30 - 16:30	3.00	DRLPRO	06	E	P		TOOH PUMP 10 STDS OUT AND TIH REAMING
12/12/2011	16:30 - 18:00	1.50	DRLPRO	05	C	P		CICR COND. HOLE
	18:00 - 0:00	6.00	DRLPRO	06	B	P		TOOH, PUMP 15 STDS OUT PUMP DRY JOB, PULL
								OUT TIGHT HLOE
								TOOH FOR OPEN HOLE LOGS
12/13/2011	0:00 - 2:00	2.00	DRLPRO	06	B	P		RIG UP HALIBURTON AND RUN IN TAG BRIDGE @
	2:00 - 7:30	5.50	DRLPRO	11	D	P		6263 LOG OUT, RIG DOWN

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE	Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD	Rig Name No: H&P 311/311, PROPETRO 11/11
Event: DRILLING	Start Date: 7/25/2011	End Date: 12/15/2011
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
12/14/2011	7:30 - 15:00	7.50	DRLPRO	06	E	P		TIH TAG BRIDGE @ 6263 TOOK 40K TO GET THRU, TIH
	15:00 - 18:00	3.00	DRLPRO	05	A	P		CIRC. AND COND. HOLE FOR LOGS
	18:00 - 22:30	4.50	DRLPRO	06	B	P		TOOH PULL 5 STDS W/ PUMP, BLOW DOWN MUD LINES, TOOH
	22:30 - 23:00	0.50	DRLPRO	07	A	P		RIG SERVICE
	23:00 - 0:00	1.00	DRLPRO	11	D	P		SAFETY MEETING RIG UP HALLIBURTON AND RUN IN TO LOG.
	0:00 - 4:00	4.00	DRLPRO	11	D	P		RUN IN TO LOG, TAG BRIDGE @ 4506' CAN'T WORK BY, PULL OUT, RD LOGGERS.
	4:00 - 12:30	8.50	DRLPRO	12	C	P		SAFETY MEETING, RU CASING CREW, RUN 237 JOINTS 4 1/2 11.60# P-110 119JTS LT&C, ON BOTTOM 118 JTS DQX ON TOP, SHOE @10039', SHOE JOINT 42.29' FLOAT @9995', 1MARKER @7540', 1 XOVER @4979', 20 CENTRALIZERS.
	12:30 - 13:30	1.00	DRLPRO	21	D	Z		WAIT ON CASING CREW TO FIX TONG HYD LINE. AND DOOR SWITCH
	13:30 - 20:00	6.50	DRLPRO	12	C	P		RUN CASING
	20:00 - 21:30	1.50	DRLPRO	05	A	P		CIRC. BOTTOMS UP FOR CEMENT
12/15/2011	21:30 - 22:00	0.50	DRLPRO	07	A	P		RIG SERVICE
	22:00 - 0:00	2.00	DRLPRO	12	E	P		SAFETY MEETING, INTSTALL CEMENT HEAD, PRESSURE TEST LINES T/5000 PSI, PUMPED 25 BBL PRE FLUSH 8.4 PPG H2O, LEAD CEMENT, 12 PPG @2.26 CU/FT SK YIELD, 462 SKS, 185 BBLs, TAIL CEMENT 14.3 PPG @ 1.31 CU/FT SK YIELD, 1150 SKS, 268 BBLs, DISPLACED 155 BBLs H2O W/CLAY CARE, FINAL LIFT PRESS 2356 PSI, BUMP PLUG T/3309 PSI HELD FOR 5 MIN BLEED OFF FLOATS HELD, 0 BBLs LEAD CEMENT T/SURF, EST. TOP OF TAIL 4500', TOP OF LEAD 200' R/D BJ CEMENTING EQUIP, FLUSH OUT BOPE & FLOWLINE
	0:00 - 6:00	6.00	DRLPRO	14	A	P		NIPPLE DOWN BOPE, SET 4 1/2" C-22 CSG SLIPS W/100K ON SLIPS, CUT OFF CSG, CLEAN MUD TANKS, RIG RELEASED @ 06:00 12/15/2011

## 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well/Wellbore Information

Well	NBU 1021-30D4BS BLUE	Wellbore No.	OH
Well Name	NBU 1021-30D4BS	Wellbore Name	NBU 1021-30D4BS
Report No.	1	Report Date	1/30/2012
Project	UTAH-UINTAH	Site	NBU 1021-30F PAD
Rig Name/No.		Event	COMPLETION
Start Date	1/20/2012	End Date	2/7/2012
Spud Date	8/17/2011	Active Datum	RKB @5,287.00usft (above Mean Sea Level)
UWI	SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0		

### 1.3 General

Contractor	SUPERIOR 2	Job Method	PERFORATE	Supervisor	JEFF SAMUELS
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

### 1.4 Initial Conditions

Fluid Type		Fluid Density		Gross Interval	6,440.0 (usft)-9,898.0 (usft)	Start Date/Time	1/30/2012 12:00AM
Surface Press		Estimate Res Press		No. of Intervals	33	End Date/Time	1/30/2012 12:00AM
TVD Fluid Top		Fluid Head		Total Shots	192	Net Perforation Interval	58.00 (usft)
Hydrostatic Press		Press Difference		Avg Shot Density	3.31 (shot/ft)	Final Surface Pressure	
Balance Cond	NEUTRAL					Final Press Date	

### 1.5 Summary

## 2 Intervals

### 2.1 Perforated Interval

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
	WASATCH/			6,440.0	6,446.0	4.00		0.360	EXP/	3.375	90.00			23.00 PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

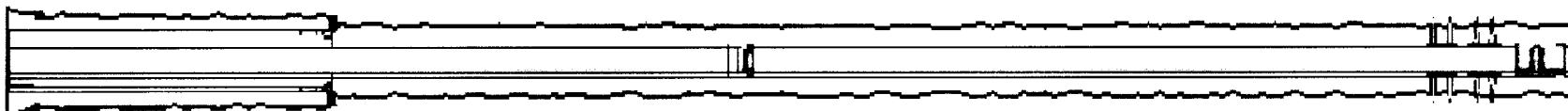
Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
	WASATCH/			7,522.0	7,524.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,756.0	7,762.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			7,957.0	7,958.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,093.0	8,094.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,117.0	8,118.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,142.0	8,143.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,161.0	8,162.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,183.0	8,184.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,195.0	8,196.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,216.0	8,217.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,298.0	8,300.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,333.0	8,334.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,459.0	8,462.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			8,581.0	8,583.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,044.0	9,046.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,096.0	9,098.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,180.0	9,182.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,223.0	9,224.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,242.0	9,243.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,264.0	9,266.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,287.0	9,288.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (usft)	CCL-T S (usft)	MD Top (usft)	MD Base (usft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
	MESAVERDE/			9,313.0	9,314.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,325.0	9,326.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,341.0	9,342.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,492.0	9,494.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,548.0	9,550.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,569.0	9,570.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,597.0	9,598.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,694.0	9,696.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/			9,730.0	9,732.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
1/30/2012 12:00AM	MESAVERDE/			9,812.0	9,814.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
1/30/2012 12:00AM	MESAVERDE/			9,896.0	9,898.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	

## 3 Plots

## 3.1 Wellbore Schematic



**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011		Spud Date: 8/17/2011	
Project: UTAH-UINTAH		Site: NBU 1021-30F PAD			Rig Name No: MILES-GRAY 1/1
Event: COMPLETION		Start Date: 1/20/2012		End Date: 2/7/2012	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)			UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
8/17/2011	-							
1/20/2012	9:30 - 11:30	2.00	COMP	33		P		<p>FILL SURFACE CSG. MIRU B&amp;C QUICK TEST.</p> <p>PSI TEST T/ 1000 PSI. HELD FOR 15 MIN LOST 13 PSI.</p> <p>PSI TEST T/ 3500 PSI. HELD FOR 15 MIN LOST 40 PSI.</p> <p>1ST PSI TEST T/ 9000 PSI. HELD FOR 30 MIN LOST 76 PSI.</p> <p>NO COMMUNICATION OR MIGRATION WITH SURFACE CSG</p> <p>BLEED OFF PSI. MOVE T/ NEXT WELL.</p> <p>SWMFW</p>
1/30/2012	7:00 - 7:45	0.75	COMP	48		P		HSM, HIGH PSI LINES.
	7:45 - 18:00	10.25	COMP	36	B	P		<p>PERF STG 1) PU 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH PERF AS PER DESIGN. POOH, X-OVER FOR FRAC CREW.</p> <p>FRAC STG 1) WHP 185 PSI, BRK 5006 PSI @ 4.7 BPM. ISIP 3075 PSI, FG .75.</p> <p>CALC PERFS OPEN @ 44 BPM @ 5710 PSI = 90% HOLES OPEN.</p> <p>ISP 3033 PSI, FG .75, NPI -40 PSI.</p> <p>MP 6746 PSI, MR 50.7 BPM, AP 5917 PSI, AR 49.5 BPM,</p> <p>PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 2) PU 4 1/2 HAL CBP &amp; 3 1/8 EXP GUN. 23 GM, .36 HOLE SIZE. 90 DEG PHASING. SET CBP @ 9627'. P/U &amp; PERF AS PER DES.</p> <p>FRAC STAGE 2) WHP 2005 PSI, BRK 6058 PSI @ 4.8 BPM. ISIP 3301 PSI, FG .78.</p> <p>CALC PERFS OPEN @ 49.4 BPM @ 5672 PSI = 100% HOLES OPEN</p> <p>ISIP 3066 PSI, FG .76, NPI -235 PSI.</p> <p>MP 6581 PSI, MR 50.9 BPM, AP 5114 PSI, AR 50.4 BPM,</p> <p>PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 3) PU 4 1/2 HAL CBP, 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE, 90 DEG PHASING, SET CBP @ 9372. P/U &amp; PERF AS PER DES.</p>

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD		Rig Name No: MILES-GRAY 1/1
Event: COMPLETION	Start Date: 1/20/2012		End Date: 2/7/2012
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/NW/0/1950/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
1/31/2012	8:00 - 18:00	10.00	COMP	36	B	P		<p>HELD SAFETY MEETING. TEST LINES</p> <p>FRAC STAGE 3)WHP 2560 PSI, BRK 4267 PSI @ 4.4 BPM. ISIP 2943 PSI, FG .76. CALC PERFS OPEN @ 43.9 BPM @ 5737 PSI = 100% HOLES OPEN. ISIP 3259 PSI, FG .79, NPI 316 PSI. MP 6019 PSI, MR 50.9 BPM, AP 5001 PSI, AR 50 BPM, PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 4) PU 4 1/2 HAL CBP, &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE, 90 DEG PHASING, SET CBP @ 9212. P/U &amp; PERF AS PER DES.</p> <p>FRAC STAGE 4)WHP 2950 PSI, BRK 4335 PSI @ 4.7 BPM. ISIP 2980 PSI, FG .76. CALC PERFS OPEN @ 44.9 BPM @ 5823 PSI = 81% HOLES OPEN. ISIP 3110 PSI, F.G. 78, NPI 220 PSI. MP 6708 PSI, MR 51 BPM, AP 5629 PSI, AR 50.3 BPM, PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 5) PU 4 1/2 HAL CBP, &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE, 90 DEG PHASING. SET CBP @ 8613. P/U &amp; PERF AS PER DES.</p> <p>FRAC STAGE 5) WHP 640 PSI, BRK 3651 PSI @ 4.8 BPM. ISIP 2371 PSI, FG .72. CALC PERFS OPEN @ 50.3 BPM @ 5207 PSI = 97% HOLES OPEN. ISIP 3037 PSI, FG .80, NPI 666 PSI. MP 5483 PSI, MR 51.1 BPM, AP 5056 PSI, AR 50.3 BPM, PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 6) PU 4 1/2 HAL CBP, 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE, 120 DEG PHASING. SET CBP @ 8613. P/U PERF AS PER DES. POOH, SWIFN. HSM. HIGH PSI LINES</p>
2/1/2012	7:00 - 7:15	0.25	COMP	48		P		

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD		Rig Name No: MILES-GRAY 1/1
Event: COMPLETION	Start Date: 1/20/2012		End Date: 2/7/2012
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0	

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 18:00	10.75	COMP	36	B	P		<p>FRAC STG 6)WHP 1687 PSI, BRK 2680 PSI @ 3.8 BPM. ISIP 2174 PSI, FG .71. CALC PERFS OPEN @ 50.8 BPM @ 4682 PSI = 100% HOLES OPEN. ISIP 2823 PSI, FG .79, NPI 649 PSI. MP 5291 PSI, MR 51.3 BPM, AP 4542 PSI, AR 50.7 BPM, PUMPED 30/50 OWATTA SAND. SWI, X-OVER FOR WL.</p> <p>PERF STG 7)PU 4 1/2 8K HAL CBP &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE. 120 DEG PHASING. RIH SET CBP @ 7792' P/U PERF AS PER DESIGN.</p> <p>FRAC STAGE 7)WHP 1058 PSI, BRK 2066 PSI @ 4.1 BPM. ISIP 1284 PSI, FG .61. CALC PERFS OPEN @ 51.2 BPM @ 4354 PSI = 89% HOLES OPEN. ISIP 2737 PSI, FG .80, NPI 1453 PSI. MP 5107 PSI, MR 51.8 BPM, AP 4224 PSI, AR 51 BPM, PUMPED 30/50 OWATTA SAND</p> <p>PERF STAGE 8) PU 4 1/2 HAL CBP, &amp; 3 1/8 EXP GUN, 23 GM, .36 HOLE SIZE, 90 DEG PHASING. SET CBP @ 6476'. P/U &amp; PERF AS PER DES.</p> <p>FRAC STAGE 8) WHP 294 PSI, BRK 1518 PSI @ 3.4 BPM. ISIP 1253 PSI, FG .63. CALC PERFS OPEN @ 49.2 BPM @ 3524 PSI = 100% HOLES OPEN. ISIP 2214 PSI, FG .78, NPI 961 PSI. MP 3902 PSI, MR 51.8 BPM, AP 3475 PSI, AR 50.9 BPM, PUMPED 30/50 OWATTA SAND</p> <p>PU 4 1/2 HAL CBP RIH &amp; SET @ 6390.</p> <p>TOTAL SAND = 174,635 LBS TOTAL CLFL = 7849 BBL JSA-SAFETY MEETING</p>
2/6/2012	7:00 - 7:15	0.25	COMP	48		P		<p>MIRU SERVICE UNIT, N/D WH. N/U BOPS, TEST BOPS 3000#, OK, R/U TBG EQUIP. P/U 3 7/8" BIT &amp; POBS, TIH W/ 2 3/8" L-80 TBG, TALLY IN, TAG SAND 6358', R/U POWER SWIVEL AND DRILLING HEAD, PREPARE TO DRILL OUT IN AM, SWI SDFN JSA-SAFETY MEETING</p>
	7:15 - 8:30	1.25	COMP	30	A	P		
	8:30 - 15:00	6.50	COMP	31	I	P		
2/7/2012	7:00 - 7:15	0.25	COMP	48		P		JSA-SAFETY MEETING

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011	Spud Date: 8/17/2011
Project: UTAH-UINTAH	Site: NBU 1021-30F PAD		Rig Name No: MILES-GRAY 1/1
Event: COMPLETION	Start Date: 1/20/2012	End Date: 2/7/2012	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)		UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/W/0/1950/0/0	

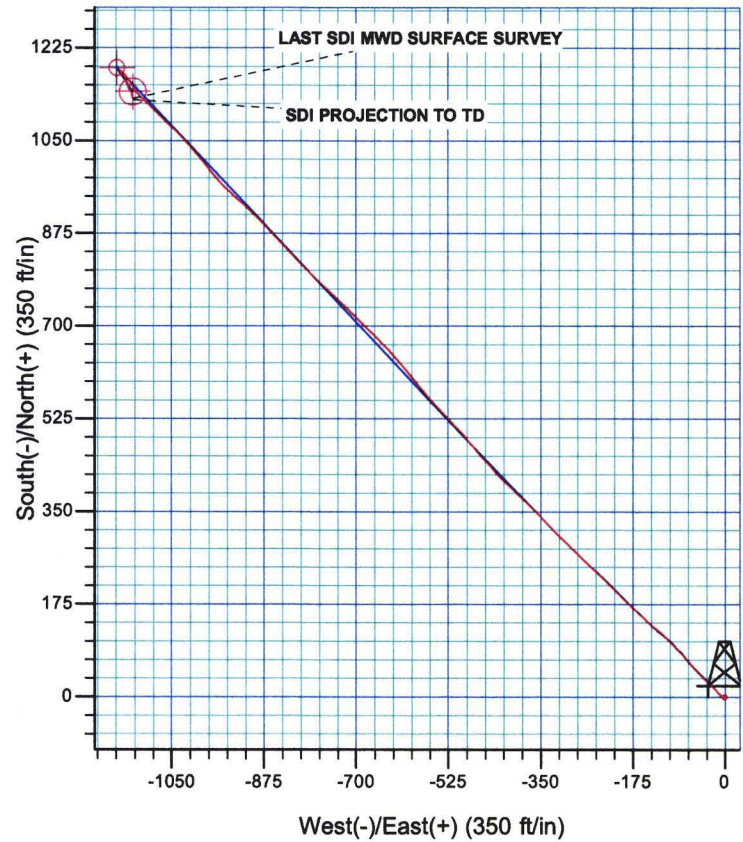
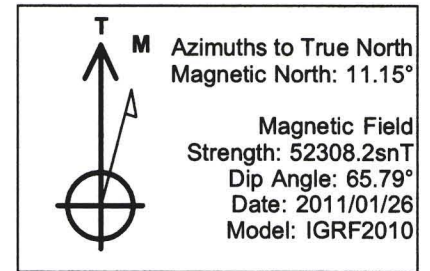
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
	7:15 - 15:30	8.25	COMP	44	C	P		<p>NO PRESSURE ON WELL, TAG SAND @ 6378', PRESSURE TEST BOPS CSG TO 3000#, ESTB CIRC DN TBG OUT CSG, C/O SAND TO 6388' ( DRLG CBP #1 ) 6388', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 50 # DIFF, RIH TAG @ 6460', C/O 12' SAND, FCP = 100 #,</p> <p>( DRLG CBP #2 ) 6472', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 200 # DIFF, RIH TAG @ 7767', C/O 30' SAND, FCP = 120 #,</p> <p>( DRLG CBP #3 ) 7792', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 200# DIFF, RIH TAG @ 8227', C/O 20' SAND, FCP = 130 #,</p> <p>( DRLG CBP #4 ) 8247', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 200# DIFF, RIH TAG @ 8588', C/O 20' SAND, FCP = 200 #,</p> <p>( DRLG CBP #5 ) 8608', DRILL OUT HALLIBURTON 8K CBP IN 10 MIN, 100# DIFF, RIH TAG @ 9180', C/O 30' SAND, FCP = 300 #,</p> <p>( DRLG CBP #6 ) 9210', DRILL OUT HALLIBURTON 8K CBP IN 15 MIN, 400 # DIFF, RIH TAG @ 9339', C/O 30' SAND, FCP = 250 #,</p> <p>( DRLG CBP #7 ) 9369', DRILL OUT HALLIBURTON 8K CBP IN 15 MIN, 500 # DIFF, RIH TAG @ 9593', C/O 30' SAND, FCP = 500 #,</p> <p>( DRLG CBP #8 ) 9623', DRILL OUT HALLIBURTON 8K CBP IN 20 MIN, 400 # DIFF, RIH TAG @ 9929', C/O 40' SAND, DRILL OUT 40' CEMENT, PBTD @ 9989", FCP = 350 #, CIRC WELL CLEAN, R/D POWER SWIVEL, POOH LAY DN 18 JTS ON TRAILER, LAND TBG W/ HANGER W/ 297 JTS 2 3/8" L-80 TBG, EOT @ 9456.26', R/DTBG EQUIP, N/D BOPS, N/U WH, DROP BALL DN TBG, PRESSURE TEST LINES HAL 9000, TO 2500#, HOLD FOR 10 MIN LAOST 10#, PUMP BIT OFF @ 1400 #, WAIT 30 MIN FOR BIT TO FALL, OPEN WELL TO PIT FLOWING BACK WTR TILL SEE GAS, TURN WELL TO HALL 9000, TURN WELL OVER TO FBC,</p> <div style="margin-top: 20px;"> <p>KB = 25.00'</p> <p>HANGER = .83'</p> <p>297 JTS 2 3/8" L-80 TBG = 9428.23'</p> <p>XN-NIPPLE 1.875" POBS = 2.20'</p> <p style="text-align: right;">EOT = 9456.26'</p> </div> <p style="margin-top: 20px;">318 JTS 2 3/8" L-80 TBG DELV. 297 JTS 2 3/8" L-80 TBG LANDED</p>

**US ROCKIES REGION**  
**Operation Summary Report**

Well: NBU 1021-30D4BS BLUE		Spud Conductor: 8/6/2011		Spud Date: 8/17/2011	
Project: UTAH-UINTAH		Site: NBU 1021-30F PAD		Rig Name No: MILES-GRAY 1/1	
Event: COMPLETION		Start Date: 1/20/2012		End Date: 2/7/2012	
Active Datum: RKB @5,287.00usft (above Mean Sea Level)			UWI: SE/NW/0/10/S/21/E/30/0/0/26/PM/N/1964/N/0/1950/0/0		

Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (usft)	Operation
2/16/2012	7:00 -		PROD	50		P		21 JTS 2 2/8" L-80 TBG RETURNED WELL IP'D ON 2/16/12 - 1064 MCFD, 0 BOPD, 342 BWPD, CP 1225#, FTP 603#, CK 24/64", LP 172#, 24 HRS

WELL DETAILS: NBU 1021-30D4BS					
GL 5262' & KB 25 @ 5287.00R (H&P 311)					
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14500186.28	2033937.09	39° 55' 13.771 N	109° 35' 47.450 W



SECTION DETAILS	
No plan data is available	
PROJECT DETAILS: UTAH - UTM (feet), NAD27, Zone 12N	FORMATION TOP DETAILS
Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: NAD 1927 (NADCON CONUS) Ellipsoid: Clarke 1866 Zone: Zone 12N (114 W to 108 W) Location: SECTION 30 T10S R21E System Datum: Mean Sea Level	No formation data is available
CASING DETAILS	
No casing data is available	



**Scientific Drilling**  
Rocky Mountain Operations

# **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N**

**UINTAH\_NBU 1021-30F PAD**

**NBU 1021-30D4BS**

**NBU 1021-30D4BS**

**Design: NBU 1021-30D4BS**

## **Standard Survey Report**

**11 January, 2012**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>MD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Well:</b>	NBU 1021-30D4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1021-30D4BS	<b>Database:</b>	EDM5000-RobertS-Local

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	UINTAH_NBU 1021-30F PAD, SECTION 30 T10S R21E			
<b>Site Position:</b>		<b>Northing:</b>	14,500,196.10 usft	<b>Latitude:</b> 39° 55' 13.868 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,033,935.24 usft	<b>Longitude:</b> 109° 35' 47.472 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.90 °

<b>Well</b>	NBU 1021-30D4BS, 1964 FNL 1950 FWL			
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 14,500,186.28 usft	<b>Latitude:</b> 39° 55' 13.771 N
	+E/-W	0.00 ft	<b>Easting:</b> 2,033,937.09 usft	<b>Longitude:</b> 109° 35' 47.450 W
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 5,262.00 ft

<b>Wellbore</b>	NBU 1021-30D4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2011/01/26	11.15	65.79	52,308

<b>Design</b>	NBU 1021-30D4BS				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	314.33	

<b>Survey Program</b>	<b>Date</b> 2012/01/11				
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
21.00	2,129.00	Survey #1 - Surface Weatherford MWD (N	MWD	MWD - Standard	
2,204.00	10,054.00	Survey #2 SDI MWD SURFACE (NBU 102	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21.00	0.00	0.00	21.00	0.00	0.00	0.00	0.00	0.00	0.00	
197.00	0.21	239.37	197.00	-0.16	-0.28	0.08	0.12	0.12	0.00	
<b>First Weatherford Survey</b>										
283.00	2.52	284.91	282.97	0.24	-2.24	1.77	2.76	2.69	52.95	
369.00	2.81	307.26	368.88	2.00	-5.75	5.51	1.25	0.34	25.99	
459.00	4.63	318.37	458.69	6.06	-9.91	11.32	2.17	2.02	12.34	
549.00	6.13	315.50	548.29	12.20	-15.70	19.75	1.69	1.67	-3.19	
639.00	7.88	313.12	637.61	19.84	-23.57	30.73	1.97	1.94	-2.64	
729.00	9.38	313.50	726.59	29.11	-33.39	44.23	1.67	1.67	0.42	

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1021-30F PAD  
**Well:** NBU 1021-30D4BS  
**Wellbore:** NBU 1021-30D4BS  
**Design:** NBU 1021-30D4BS

**Local Co-ordinate Reference:** Well NBU 1021-30D4BS  
**TVD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**MD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
819.00	10.63	314.62	815.22	39.99	-44.62	59.86	1.41	1.39	1.24
909.00	11.81	317.00	903.50	52.56	-56.81	77.36	1.41	1.31	2.64
999.00	14.25	321.25	991.18	67.93	-70.03	97.56	2.91	2.71	4.72
1,089.00	14.56	319.25	1,078.35	85.14	-84.35	119.83	0.65	0.34	-2.22
1,179.00	16.00	312.87	1,165.17	102.15	-100.82	143.50	2.46	1.60	-7.09
1,269.00	18.00	310.37	1,251.24	119.60	-120.51	169.78	2.37	2.22	-2.78
1,359.00	19.38	311.00	1,336.49	138.41	-142.38	198.56	1.55	1.53	0.70
1,449.00	20.31	313.62	1,421.14	158.98	-164.95	229.09	1.43	1.03	2.91
1,539.00	22.00	315.36	1,505.08	181.75	-188.11	261.56	2.00	1.88	1.93
1,629.00	22.88	314.75	1,588.26	206.06	-212.38	295.91	1.01	0.98	-0.68
1,719.00	21.94	313.87	1,671.46	230.03	-236.93	330.22	1.11	-1.04	-0.98
1,809.00	22.63	313.12	1,754.74	253.52	-261.69	364.35	0.83	0.77	-0.83
1,899.00	23.63	313.75	1,837.51	277.83	-287.35	399.70	1.14	1.11	0.70
1,989.00	24.88	315.75	1,919.56	303.87	-313.60	436.66	1.66	1.39	2.22
2,079.00	26.13	315.62	2,000.79	331.59	-340.67	475.40	1.39	1.39	-0.14
2,129.00	27.33	315.33	2,045.44	347.63	-356.44	497.89	2.41	2.40	-0.58
<b>Last Weatherford Survey</b>									
2,204.00	26.85	312.85	2,112.22	371.39	-380.96	532.04	1.64	-0.64	-3.31
<b>FIRST SDI MWD SURFACE SURVEY</b>									
2,298.00	28.67	314.53	2,195.40	401.64	-412.60	575.81	2.11	1.94	1.79
2,393.00	29.19	318.66	2,278.55	435.02	-444.15	621.70	2.17	0.55	4.35
2,487.00	30.34	320.07	2,360.15	470.44	-474.53	668.18	1.43	1.22	1.50
2,581.00	29.63	316.20	2,441.57	505.42	-505.86	715.04	2.19	-0.76	-4.12
2,676.00	30.95	316.38	2,523.60	540.05	-538.97	762.92	1.39	1.39	0.19
2,770.00	32.18	320.33	2,603.70	576.82	-571.63	811.98	2.56	1.31	4.20
2,864.00	31.74	319.54	2,683.45	614.90	-603.65	861.50	0.65	-0.47	-0.84
2,959.00	32.01	318.22	2,764.13	652.89	-636.64	911.50	0.79	0.28	-1.39
3,053.00	31.04	314.80	2,844.26	688.35	-670.44	960.60	2.16	-1.03	-3.64
3,147.00	32.10	313.83	2,924.35	722.73	-705.66	1,009.81	1.25	1.13	-1.03
3,242.00	30.07	312.86	3,005.70	756.40	-741.31	1,058.85	2.20	-2.14	-1.02
3,336.00	28.58	314.71	3,087.66	788.24	-774.56	1,104.88	1.86	-1.59	1.97
3,431.00	27.17	315.24	3,171.63	819.63	-805.98	1,149.29	1.51	-1.48	0.56
3,525.00	27.52	317.08	3,255.13	850.77	-835.88	1,192.44	0.97	0.37	1.96
3,619.00	27.79	316.99	3,338.39	882.70	-865.62	1,236.02	0.29	0.29	-0.10
3,714.00	25.94	313.65	3,423.14	913.24	-895.76	1,278.93	2.51	-1.95	-3.52
3,808.00	23.30	312.34	3,508.59	939.96	-924.39	1,318.07	2.87	-2.81	-1.39
3,902.00	21.46	314.53	3,595.50	964.54	-950.39	1,353.85	2.15	-1.96	2.33
3,996.00	21.19	321.21	3,683.08	989.84	-973.29	1,387.91	2.60	-0.29	7.11
4,091.00	20.66	321.21	3,771.82	1,016.29	-994.55	1,421.60	0.56	-0.56	0.00
4,185.00	19.79	319.45	3,860.02	1,041.30	-1,015.28	1,453.91	1.13	-0.93	-1.87
4,279.00	16.27	314.88	3,949.39	1,062.70	-1,034.97	1,482.94	4.03	-3.74	-4.86
4,374.00	17.15	312.51	4,040.38	1,081.55	-1,054.72	1,510.25	1.17	0.93	-2.49
4,468.00	15.48	314.36	4,130.60	1,099.69	-1,073.91	1,536.65	1.86	-1.78	1.97

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1021-30F PAD  
**Well:** NBU 1021-30D4BS  
**Wellbore:** NBU 1021-30D4BS  
**Design:** NBU 1021-30D4BS

**Local Co-ordinate Reference:** Well NBU 1021-30D4BS  
**TVD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**MD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,562.00	10.73	316.73	4,222.12	1,114.84	-1,088.88	1,557.95	5.08	-5.05	2.52
4,657.00	7.45	312.50	4,315.92	1,125.44	-1,099.49	1,572.94	3.52	-3.45	-4.45
4,751.00	7.25	315.49	4,409.15	1,133.79	-1,108.14	1,584.96	0.46	-0.21	3.18
4,846.00	8.09	324.20	4,503.30	1,143.49	-1,116.25	1,597.54	1.51	0.88	9.17
4,940.00	6.77	325.25	4,596.51	1,153.40	-1,123.28	1,609.50	1.41	-1.40	1.12
5,034.00	5.80	328.42	4,689.94	1,162.00	-1,128.93	1,619.55	1.10	-1.03	3.37
5,129.00	5.26	326.98	4,784.50	1,169.74	-1,133.81	1,628.45	0.59	-0.57	-1.52
5,223.00	3.08	316.73	4,878.24	1,175.19	-1,137.89	1,635.18	2.44	-2.32	-10.90
5,317.00	2.87	313.92	4,972.12	1,178.67	-1,141.32	1,640.06	0.27	-0.22	-2.99
5,412.00	0.97	298.62	5,067.06	1,180.70	-1,143.74	1,643.21	2.05	-2.00	-16.11
5,506.00	0.88	277.00	5,161.05	1,181.17	-1,145.15	1,644.55	0.38	-0.10	-23.00
5,600.00	0.44	277.09	5,255.04	1,181.30	-1,146.23	1,645.41	0.47	-0.47	0.10
5,695.00	0.18	156.15	5,350.04	1,181.21	-1,146.53	1,645.56	0.58	-0.27	-127.31
5,789.00	0.79	183.84	5,444.04	1,180.43	-1,146.51	1,645.00	0.68	0.65	29.46
5,883.00	0.62	148.77	5,538.03	1,179.35	-1,146.29	1,644.09	0.48	-0.18	-37.31
5,978.00	0.97	167.40	5,633.02	1,178.12	-1,145.85	1,642.92	0.45	0.37	19.61
6,072.00	1.49	149.83	5,727.00	1,176.29	-1,145.06	1,641.07	0.68	0.55	-18.69
6,167.00	0.88	213.99	5,821.98	1,174.62	-1,144.85	1,639.75	1.43	-0.64	67.54
6,261.00	0.62	74.68	5,915.98	1,174.15	-1,144.76	1,639.37	1.50	-0.28	-148.20
6,355.00	0.70	87.69	6,009.97	1,174.31	-1,143.70	1,638.72	0.18	0.09	13.84
6,450.00	0.88	133.83	6,104.97	1,173.83	-1,142.59	1,637.59	0.67	0.19	48.57
6,544.00	0.35	73.27	6,198.96	1,173.41	-1,141.80	1,636.73	0.82	-0.56	-64.43
6,638.00	0.53	154.22	6,292.96	1,173.10	-1,141.33	1,636.18	0.62	0.19	86.12
6,733.00	0.97	111.42	6,387.95	1,172.41	-1,140.39	1,635.03	0.72	0.46	-45.05
6,827.00	0.53	96.92	6,481.94	1,172.07	-1,139.22	1,633.95	0.51	-0.47	-15.43
6,922.00	0.62	122.67	6,576.94	1,171.74	-1,138.35	1,633.09	0.29	0.09	27.11
7,016.00	0.28	3.15	6,670.94	1,171.70	-1,137.91	1,632.75	0.85	-0.36	-127.15
7,110.00	0.35	210.03	6,764.94	1,171.68	-1,138.04	1,632.83	0.65	0.07	-162.89
7,205.00	0.53	164.59	6,859.93	1,171.00	-1,138.07	1,632.38	0.40	0.19	-47.83
7,299.00	0.44	202.21	6,953.93	1,170.25	-1,138.09	1,631.87	0.34	-0.10	40.02
7,394.00	0.35	163.27	7,048.93	1,169.63	-1,138.15	1,631.47	0.29	-0.09	-40.99
7,488.00	1.23	182.70	7,142.92	1,168.35	-1,138.11	1,630.55	0.97	0.94	20.67
7,582.00	1.23	167.93	7,236.90	1,166.36	-1,137.95	1,629.04	0.34	0.00	-15.71
7,677.00	0.70	166.44	7,331.88	1,164.79	-1,137.60	1,627.70	0.56	-0.56	-1.57
7,771.00	1.32	150.00	7,425.87	1,163.30	-1,136.92	1,626.17	0.72	0.66	-17.49
7,865.00	1.58	147.80	7,519.84	1,161.26	-1,135.69	1,623.87	0.28	0.28	-2.34
7,960.00	1.93	154.48	7,614.79	1,158.71	-1,134.30	1,621.09	0.43	0.37	7.03
8,054.00	0.70	142.71	7,708.77	1,156.83	-1,133.27	1,619.04	1.33	-1.31	-12.52
8,149.00	0.26	64.04	7,803.76	1,156.46	-1,132.73	1,618.39	0.73	-0.46	-82.81
8,243.00	0.18	345.91	7,897.76	1,156.70	-1,132.57	1,618.45	0.30	-0.09	-83.12
8,337.00	0.26	48.14	7,991.76	1,156.98	-1,132.45	1,618.56	0.25	0.09	66.20
8,432.00	0.35	165.73	8,086.76	1,156.84	-1,132.22	1,618.30	0.55	0.09	123.78
8,526.00	0.88	131.28	8,180.76	1,156.09	-1,131.60	1,617.33	0.66	0.56	-36.65
8,620.00	0.18	287.20	8,274.75	1,155.66	-1,131.20	1,616.74	1.11	-0.74	165.87

**Company:** US ROCKIES REGION PLANNING  
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**Wellbore:** NBU 1021-30D4BS  
**Design:** NBU 1021-30D4BS

**Local Co-ordinate Reference:** Well NBU 1021-30D4BS  
**TVD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**MD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,715.00	0.53	260.22	8,369.75	1,155.63	-1,131.78	1,617.13	0.40	0.37	-28.40
8,809.00	0.88	170.83	8,463.75	1,154.84	-1,132.09	1,616.81	1.09	0.37	-95.10
8,903.00	1.14	166.00	8,557.73	1,153.22	-1,131.75	1,615.43	0.29	0.28	-5.14
8,998.00	1.32	155.54	8,652.71	1,151.31	-1,131.07	1,613.61	0.30	0.19	-11.01
9,092.00	1.14	150.97	8,746.69	1,149.50	-1,130.17	1,611.70	0.22	-0.19	-4.86
9,187.00	1.58	155.89	8,841.66	1,147.48	-1,129.17	1,609.58	0.48	0.46	5.18
9,281.00	1.41	157.47	8,935.63	1,145.23	-1,128.20	1,607.31	0.19	-0.18	1.68
9,376.00	1.14	154.04	9,030.61	1,143.30	-1,127.34	1,605.34	0.30	-0.28	-3.61
9,470.00	1.22	152.50	9,124.59	1,141.57	-1,126.47	1,603.51	0.09	0.09	-1.64
9,564.00	1.32	168.55	9,218.56	1,139.62	-1,125.79	1,601.67	0.39	0.11	17.07
9,659.00	0.97	153.25	9,313.54	1,137.83	-1,125.21	1,600.00	0.49	-0.37	-16.11
9,756.00	1.14	169.69	9,410.53	1,136.15	-1,124.67	1,598.44	0.36	0.18	16.95
9,850.00	1.49	171.53	9,504.50	1,134.02	-1,124.32	1,596.70	0.37	0.37	1.96
9,945.00	1.93	158.26	9,599.46	1,131.32	-1,123.55	1,594.26	0.62	0.46	-13.97
9,997.00	2.55	150.88	9,651.42	1,129.49	-1,122.66	1,592.35	1.31	1.19	-14.19
<b>LAST SDI MWD SURFACE SURVEY</b>									
10,054.00	2.55	150.88	9,708.36	1,127.28	-1,121.43	1,589.92	0.00	0.00	0.00
<b>SDI PROJECTION TO TD</b>									
			33						
			675						

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N-S (ft)	+E-W (ft)	
197.00	197.00	-0.16	-0.28	First Weatherford Survey
2,129.00	2,045.44	347.63	-356.44	Last Weatherford Survey

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



**Scientific Drilling**  
Rocky Mountain Operations

## **US ROCKIES REGION PLANNING**

**UTAH - UTM (feet), NAD27, Zone 12N**

**UINTAH\_NBU 1021-30F PAD**

**NBU 1021-30D4BS**

**NBU 1021-30D4BS**

**Design: NBU 1021-30D4BS**

## **Survey Report - Geographic**

**11 January, 2012**



<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>MD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Well:</b>	NBU 1021-30D4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1021-30D4BS	<b>Database:</b>	EDM5000-RobertS-Local

<b>Project</b>	UTAH - UTM (feet), NAD27, Zone 12N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 12N (114 W to 108 W)		

<b>Site</b>	UINTAH_NBU 1021-30F PAD, SECTION 30 T10S R21E				
<b>Site Position:</b>		<b>Northing:</b>	14,500,196.10 usft	<b>Latitude:</b>	39° 55' 13.868 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,033,935.24 usft	<b>Longitude:</b>	109° 35' 47.472 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.90 °

<b>Well</b>	NBU 1021-30D4BS, 1964 FNL 1950 FWL					
<b>Well Position</b>	<b>+N-S</b>	0.00 ft	<b>Northing:</b>	14,500,186.28 usft	<b>Latitude:</b>	39° 55' 13.771 N
	<b>+E-W</b>	0.00 ft	<b>Easting:</b>	2,033,937.09 usft	<b>Longitude:</b>	109° 35' 47.450 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,262.00 ft

<b>Wellbore</b>	NBU 1021-30D4BS				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF2010	2011/01/26	(°)	(°)	(nT)
			11.15	65.79	52,308

<b>Design</b>	NBU 1021-30D4BS				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N-S</b>	<b>+E-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	314.33	

<b>Survey Program</b>	<b>Date</b>	2012/01/11			
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
(ft)	(ft)				
21.00	2,129.00	Survey #1 - Surface Weatherford MWD (N	MWD	MWD - Standard	
2,204.00	10,054.00	Survey #2 SDI MWD SURFACE (NBU 102	SDI MWD	SDI MWD - Standard ver 1.0.1	

<b>Survey</b>									
<b>Measured</b>			<b>Vertical</b>			<b>Map</b>	<b>Map</b>		
<b>Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Depth</b>	<b>+N-S</b>	<b>+E-W</b>	<b>Northing</b>	<b>Easting</b>	<b>Latitude</b>	<b>Longitude</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
0.00	0.00	0.00	0.00	0.00	0.00	14,500,186.28	2,033,937.09	39° 55' 13.771 N	109° 35' 47.450 W
21.00	0.00	0.00	21.00	0.00	0.00	14,500,186.28	2,033,937.09	39° 55' 13.771 N	109° 35' 47.450 W
197.00	0.21	239.37	197.00	-0.16	-0.28	14,500,186.11	2,033,936.81	39° 55' 13.769 N	109° 35' 47.454 W
<b>First Weatherford Survey</b>									
283.00	2.52	284.91	282.97	0.24	-2.24	14,500,186.49	2,033,934.84	39° 55' 13.773 N	109° 35' 47.479 W
369.00	2.81	307.26	368.88	2.00	-5.75	14,500,188.20	2,033,931.31	39° 55' 13.791 N	109° 35' 47.524 W
459.00	4.63	318.37	458.69	6.06	-9.91	14,500,192.18	2,033,927.08	39° 55' 13.831 N	109° 35' 47.578 W
549.00	6.13	315.50	548.29	12.20	-15.70	14,500,198.23	2,033,921.20	39° 55' 13.892 N	109° 35' 47.652 W
639.00	7.88	313.12	637.61	19.84	-23.57	14,500,205.75	2,033,913.21	39° 55' 13.967 N	109° 35' 47.753 W
729.00	9.38	313.50	726.59	29.11	-33.39	14,500,214.86	2,033,903.24	39° 55' 14.059 N	109° 35' 47.879 W
819.00	10.63	314.62	815.22	39.99	-44.62	14,500,225.57	2,033,891.84	39° 55' 14.166 N	109° 35' 48.023 W

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**Wellbore:** NBU 1021-30D4BS  
**Design:** NBU 1021-30D4BS

**Local Co-ordinate Reference:** Well NBU 1021-30D4BS  
**TVD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**MD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
909.00	11.81	317.00	903.50	52.56	-56.81	14,500,237.94	2,033,879.46	39° 55' 14.291 N	109° 35' 48.180 W
999.00	14.25	321.25	991.18	67.93	-70.03	14,500,253.11	2,033,866.00	39° 55' 14.443 N	109° 35' 48.349 W
1,089.00	14.56	319.25	1,078.35	85.14	-84.35	14,500,270.09	2,033,851.41	39° 55' 14.613 N	109° 35' 48.533 W
1,179.00	16.00	312.87	1,165.17	102.15	-100.82	14,500,286.84	2,033,834.67	39° 55' 14.781 N	109° 35' 48.745 W
1,269.00	18.00	310.37	1,251.24	119.60	-120.51	14,500,303.97	2,033,814.71	39° 55' 14.953 N	109° 35' 48.997 W
1,359.00	19.38	311.00	1,336.49	138.41	-142.38	14,500,322.43	2,033,792.55	39° 55' 15.139 N	109° 35' 49.278 W
1,449.00	20.31	313.62	1,421.14	158.98	-164.95	14,500,342.65	2,033,769.65	39° 55' 15.343 N	109° 35' 49.568 W
1,539.00	22.00	315.36	1,505.08	181.75	-188.11	14,500,365.05	2,033,746.14	39° 55' 15.568 N	109° 35' 49.865 W
1,629.00	22.88	314.75	1,588.26	206.06	-212.38	14,500,388.98	2,033,721.49	39° 55' 15.808 N	109° 35' 50.177 W
1,719.00	21.94	313.87	1,671.46	230.03	-236.93	14,500,412.56	2,033,696.57	39° 55' 16.045 N	109° 35' 50.492 W
1,809.00	22.63	313.12	1,754.74	253.52	-261.69	14,500,435.66	2,033,671.45	39° 55' 16.277 N	109° 35' 50.810 W
1,899.00	23.63	313.75	1,837.51	277.83	-287.35	14,500,459.56	2,033,645.40	39° 55' 16.517 N	109° 35' 51.139 W
1,989.00	24.88	315.75	1,919.56	303.87	-313.60	14,500,485.18	2,033,618.75	39° 55' 16.775 N	109° 35' 51.476 W
2,079.00	26.13	315.62	2,000.79	331.59	-340.67	14,500,512.48	2,033,591.25	39° 55' 17.049 N	109° 35' 51.824 W
2,129.00	27.33	315.33	2,045.44	347.63	-356.44	14,500,528.26	2,033,575.23	39° 55' 17.207 N	109° 35' 52.026 W
<b>Last Weatherford Survey</b>									
2,204.00	26.85	312.85	2,112.22	371.39	-380.96	14,500,551.64	2,033,550.33	39° 55' 17.442 N	109° 35' 52.341 W
<b>FIRST SDI MWD SURFACE SURVEY</b>									
2,298.00	28.67	314.53	2,195.40	401.64	-412.60	14,500,581.39	2,033,518.22	39° 55' 17.741 N	109° 35' 52.747 W
2,393.00	29.19	318.66	2,278.55	435.02	-444.15	14,500,614.27	2,033,486.15	39° 55' 18.071 N	109° 35' 53.152 W
2,487.00	30.34	320.07	2,360.15	470.44	-474.53	14,500,649.20	2,033,455.22	39° 55' 18.421 N	109° 35' 53.542 W
2,581.00	29.63	316.20	2,441.57	505.42	-505.86	14,500,683.68	2,033,423.34	39° 55' 18.767 N	109° 35' 53.944 W
2,676.00	30.95	316.38	2,523.60	540.05	-538.97	14,500,717.80	2,033,389.70	39° 55' 19.109 N	109° 35' 54.369 W
2,770.00	32.18	320.33	2,603.70	576.82	-571.63	14,500,754.05	2,033,356.46	39° 55' 19.473 N	109° 35' 54.789 W
2,864.00	31.74	319.54	2,683.45	614.90	-603.65	14,500,791.62	2,033,323.84	39° 55' 19.849 N	109° 35' 55.200 W
2,959.00	32.01	318.22	2,764.13	652.69	-636.64	14,500,828.89	2,033,290.26	39° 55' 20.223 N	109° 35' 55.623 W
3,053.00	31.04	314.80	2,844.26	688.35	-670.44	14,500,864.01	2,033,255.91	39° 55' 20.575 N	109° 35' 56.057 W
3,147.00	32.10	313.83	2,924.35	722.73	-705.66	14,500,897.82	2,033,220.16	39° 55' 20.915 N	109° 35' 56.509 W
3,242.00	30.07	312.86	3,005.70	756.40	-741.31	14,500,930.93	2,033,183.97	39° 55' 21.248 N	109° 35' 56.967 W
3,336.00	28.58	314.71	3,087.66	788.24	-774.56	14,500,962.25	2,033,150.23	39° 55' 21.563 N	109° 35' 57.394 W
3,431.00	27.17	315.24	3,171.63	819.63	-805.98	14,500,993.14	2,033,118.32	39° 55' 21.873 N	109° 35' 57.797 W
3,525.00	27.52	317.08	3,255.13	850.77	-835.88	14,501,023.81	2,033,087.93	39° 55' 22.181 N	109° 35' 58.181 W
3,619.00	27.79	316.99	3,338.39	882.70	-865.62	14,501,055.26	2,033,057.70	39° 55' 22.496 N	109° 35' 58.563 W
3,714.00	25.94	313.65	3,423.14	913.24	-895.76	14,501,085.32	2,033,027.08	39° 55' 22.798 N	109° 35' 58.950 W
3,808.00	23.30	312.34	3,508.59	939.96	-924.39	14,501,111.59	2,032,998.04	39° 55' 23.062 N	109° 35' 59.317 W
3,902.00	21.46	314.53	3,595.50	964.54	-950.39	14,501,135.76	2,032,971.65	39° 55' 23.305 N	109° 35' 59.651 W
3,996.00	21.19	321.21	3,683.08	989.84	-973.29	14,501,160.70	2,032,948.35	39° 55' 23.555 N	109° 35' 59.945 W
4,091.00	20.66	321.21	3,771.82	1,016.29	-994.55	14,501,186.81	2,032,926.68	39° 55' 23.817 N	109° 36' 0.218 W
4,185.00	19.79	319.45	3,860.02	1,041.30	-1,015.28	14,501,211.50	2,032,905.56	39° 55' 24.064 N	109° 36' 0.484 W
4,279.00	16.27	314.88	3,949.39	1,062.70	-1,034.97	14,501,232.57	2,032,885.54	39° 55' 24.275 N	109° 36' 0.737 W
4,374.00	17.15	312.51	4,040.38	1,081.55	-1,054.72	14,501,251.12	2,032,865.49	39° 55' 24.462 N	109° 36' 0.991 W
4,468.00	15.48	314.36	4,130.80	1,099.69	-1,073.91	14,501,268.95	2,032,846.02	39° 55' 24.641 N	109° 36' 1.237 W
4,562.00	10.73	316.73	4,222.12	1,114.84	-1,088.88	14,501,283.86	2,032,830.81	39° 55' 24.791 N	109° 36' 1.429 W
4,657.00	7.45	312.50	4,315.92	1,125.44	-1,099.49	14,501,294.30	2,032,820.04	39° 55' 24.896 N	109° 36' 1.565 W
4,751.00	7.25	315.49	4,409.15	1,133.79	-1,108.14	14,501,302.51	2,032,811.26	39° 55' 24.978 N	109° 36' 1.676 W
4,846.00	8.09	324.20	4,503.30	1,143.49	-1,116.25	14,501,312.08	2,032,803.00	39° 55' 25.074 N	109° 36' 1.781 W
4,940.00	6.77	325.25	4,596.51	1,153.40	-1,123.28	14,501,321.88	2,032,795.81	39° 55' 25.172 N	109° 36' 1.871 W
5,034.00	5.80	328.42	4,689.94	1,162.00	-1,128.93	14,501,330.39	2,032,790.03	39° 55' 25.257 N	109° 36' 1.943 W
5,129.00	5.26	326.98	4,784.50	1,169.74	-1,133.81	14,501,338.05	2,032,785.03	39° 55' 25.334 N	109° 36' 2.006 W
5,223.00	3.08	316.73	4,878.24	1,175.19	-1,137.89	14,501,343.44	2,032,780.86	39° 55' 25.387 N	109° 36' 2.058 W
5,317.00	2.87	313.92	4,972.12	1,178.67	-1,141.32	14,501,346.86	2,032,777.38	39° 55' 25.422 N	109° 36' 2.102 W
5,412.00	0.97	298.62	5,067.06	1,180.70	-1,143.74	14,501,348.85	2,032,774.93	39° 55' 25.442 N	109° 36' 2.133 W
5,506.00	0.88	277.00	5,161.05	1,181.17	-1,145.15	14,501,349.30	2,032,773.51	39° 55' 25.447 N	109° 36' 2.152 W
5,600.00	0.44	277.09	5,255.04	1,181.30	-1,146.23	14,501,349.42	2,032,772.43	39° 55' 25.448 N	109° 36' 2.165 W
5,695.00	0.18	156.15	5,350.04	1,181.21	-1,146.53	14,501,349.32	2,032,772.13	39° 55' 25.447 N	109° 36' 2.169 W

**Company:** US ROCKIES REGION PLANNING  
**Project:** UTAH - UTM (feet), NAD27, Zone 12N  
**Site:** UINTAH\_NBU 1021-30F PAD  
**Well:** NBU 1021-30D4BS  
**Wellbore:** NBU 1021-30D4BS  
**Design:** NBU 1021-30D4BS

**Local Co-ordinate Reference:** Well NBU 1021-30D4BS  
**TVD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**MD Reference:** GL 5262' & KB 25 @ 5287.00ft (H&P 311)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM5000-RobertS-Local

**Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,789.00	0.79	183.84	5,444.04	1,180.43	-1,146.51	14,501,348.54	2,032,772.16	39° 55' 25.439 N	109° 36' 2.169 W
5,883.00	0.62	148.77	5,538.03	1,179.35	-1,146.29	14,501,347.46	2,032,772.40	39° 55' 25.428 N	109° 36' 2.166 W
5,978.00	0.97	167.40	5,633.02	1,178.12	-1,145.85	14,501,346.24	2,032,772.86	39° 55' 25.416 N	109° 36' 2.161 W
6,072.00	1.49	149.83	5,727.00	1,176.29	-1,145.06	14,501,344.42	2,032,773.67	39° 55' 25.398 N	109° 36' 2.150 W
6,167.00	0.88	213.99	5,821.98	1,174.62	-1,144.85	14,501,342.75	2,032,773.91	39° 55' 25.382 N	109° 36' 2.148 W
6,261.00	0.62	74.68	5,915.98	1,174.15	-1,144.76	14,501,342.29	2,032,774.01	39° 55' 25.377 N	109° 36' 2.147 W
6,355.00	0.70	87.69	6,009.97	1,174.31	-1,143.70	14,501,342.47	2,032,775.07	39° 55' 25.379 N	109° 36' 2.133 W
6,450.00	0.88	133.83	6,104.97	1,173.83	-1,142.59	14,501,342.00	2,032,776.18	39° 55' 25.374 N	109° 36' 2.119 W
6,544.00	0.35	73.27	6,198.96	1,173.41	-1,141.80	14,501,341.60	2,032,776.98	39° 55' 25.370 N	109° 36' 2.109 W
6,638.00	0.53	154.22	6,292.96	1,173.10	-1,141.33	14,501,341.30	2,032,777.45	39° 55' 25.367 N	109° 36' 2.103 W
6,733.00	0.97	111.42	6,387.95	1,172.41	-1,140.39	14,501,340.62	2,032,778.40	39° 55' 25.360 N	109° 36' 2.091 W
6,827.00	0.53	96.92	6,481.94	1,172.07	-1,139.22	14,501,340.30	2,032,779.58	39° 55' 25.357 N	109° 36' 2.075 W
6,922.00	0.62	122.67	6,576.94	1,171.74	-1,138.35	14,501,339.98	2,032,780.46	39° 55' 25.353 N	109° 36' 2.064 W
7,016.00	0.28	3.15	6,670.94	1,171.70	-1,137.91	14,501,339.94	2,032,780.90	39° 55' 25.353 N	109° 36' 2.059 W
7,110.00	0.35	210.03	6,764.94	1,171.68	-1,138.04	14,501,339.92	2,032,780.77	39° 55' 25.353 N	109° 36' 2.060 W
7,205.00	0.53	164.59	6,859.93	1,171.00	-1,138.07	14,501,339.25	2,032,780.75	39° 55' 25.346 N	109° 36' 2.061 W
7,299.00	0.44	202.21	6,953.93	1,170.25	-1,138.09	14,501,338.49	2,032,780.74	39° 55' 25.339 N	109° 36' 2.061 W
7,394.00	0.35	163.27	7,048.93	1,169.63	-1,138.15	14,501,337.88	2,032,780.69	39° 55' 25.332 N	109° 36' 2.062 W
7,488.00	1.23	182.70	7,142.92	1,168.35	-1,138.11	14,501,336.59	2,032,780.75	39° 55' 25.320 N	109° 36' 2.061 W
7,582.00	1.23	167.93	7,236.90	1,166.36	-1,137.95	14,501,334.60	2,032,780.94	39° 55' 25.300 N	109° 36' 2.059 W
7,677.00	0.70	166.44	7,331.88	1,164.79	-1,137.60	14,501,333.05	2,032,781.32	39° 55' 25.285 N	109° 36' 2.055 W
7,771.00	1.32	150.00	7,425.87	1,163.30	-1,136.92	14,501,331.56	2,032,782.02	39° 55' 25.270 N	109° 36' 2.046 W
7,865.00	1.58	147.80	7,519.84	1,161.26	-1,135.69	14,501,329.55	2,032,783.28	39° 55' 25.250 N	109° 36' 2.030 W
7,960.00	1.93	154.48	7,614.79	1,158.71	-1,134.30	14,501,327.02	2,032,784.71	39° 55' 25.225 N	109° 36' 2.012 W
8,054.00	0.70	142.71	7,708.77	1,156.83	-1,133.27	14,501,325.15	2,032,785.77	39° 55' 25.206 N	109° 36' 1.999 W
8,149.00	0.26	64.04	7,803.76	1,156.46	-1,132.73	14,501,324.79	2,032,786.32	39° 55' 25.202 N	109° 36' 1.992 W
8,243.00	0.18	345.91	7,897.76	1,156.70	-1,132.57	14,501,325.03	2,032,786.47	39° 55' 25.205 N	109° 36' 1.990 W
8,337.00	0.26	48.14	7,991.76	1,156.98	-1,132.45	14,501,325.32	2,032,786.59	39° 55' 25.207 N	109° 36' 1.989 W
8,432.00	0.35	165.73	8,086.76	1,156.84	-1,132.22	14,501,325.18	2,032,786.82	39° 55' 25.206 N	109° 36' 1.986 W
8,526.00	0.88	131.28	8,180.76	1,156.09	-1,131.60	14,501,324.44	2,032,787.45	39° 55' 25.199 N	109° 36' 1.978 W
8,620.00	0.18	287.20	8,274.75	1,155.66	-1,131.20	14,501,324.01	2,032,787.86	39° 55' 25.194 N	109° 36' 1.973 W
8,715.00	0.53	260.22	8,369.75	1,155.63	-1,131.78	14,501,323.97	2,032,787.28	39° 55' 25.194 N	109° 36' 1.980 W
8,809.00	0.88	170.83	8,463.75	1,154.84	-1,132.09	14,501,323.18	2,032,786.98	39° 55' 25.186 N	109° 36' 1.984 W
8,903.00	1.14	166.00	8,557.73	1,153.22	-1,131.75	14,501,321.57	2,032,787.35	39° 55' 25.170 N	109° 36' 1.980 W
8,998.00	1.32	155.54	8,652.71	1,151.31	-1,131.07	14,501,319.66	2,032,788.06	39° 55' 25.151 N	109° 36' 1.971 W
9,092.00	1.14	150.97	8,746.69	1,149.50	-1,130.17	14,501,317.87	2,032,788.99	39° 55' 25.134 N	109° 36' 1.959 W
9,187.00	1.58	155.89	8,841.66	1,147.48	-1,129.17	14,501,315.87	2,032,790.01	39° 55' 25.114 N	109° 36' 1.946 W
9,281.00	1.41	157.47	8,935.63	1,145.23	-1,128.20	14,501,313.63	2,032,791.02	39° 55' 25.091 N	109° 36' 1.934 W
9,376.00	1.14	154.04	9,030.61	1,143.30	-1,127.34	14,501,311.72	2,032,791.91	39° 55' 25.072 N	109° 36' 1.923 W
9,470.00	1.22	152.50	9,124.59	1,141.57	-1,126.47	14,501,310.00	2,032,792.81	39° 55' 25.055 N	109° 36' 1.912 W
9,564.00	1.32	168.55	9,218.56	1,139.62	-1,125.79	14,501,308.07	2,032,793.52	39° 55' 25.036 N	109° 36' 1.903 W
9,659.00	0.97	153.25	9,313.54	1,137.83	-1,125.21	14,501,306.28	2,032,794.13	39° 55' 25.018 N	109° 36' 1.896 W
9,756.00	1.14	169.69	9,410.53	1,136.15	-1,124.67	14,501,304.61	2,032,794.70	39° 55' 25.002 N	109° 36' 1.889 W
9,850.00	1.49	171.53	9,504.50	1,134.02	-1,124.32	14,501,302.49	2,032,795.08	39° 55' 24.980 N	109° 36' 1.884 W
9,945.00	1.93	158.26	9,599.46	1,131.32	-1,123.55	14,501,299.79	2,032,795.89	39° 55' 24.954 N	109° 36' 1.874 W
9,997.00	2.55	150.88	9,651.42	1,129.49	-1,122.66	14,501,297.98	2,032,796.81	39° 55' 24.936 N	109° 36' 1.863 W
<b>LAST SDI MWD SURFACE SURVEY</b>									
10,054.00	2.55	150.88	9,708.36	1,127.28	-1,121.43	14,501,295.79	2,032,798.08	39° 55' 24.914 N	109° 36' 1.847 W
<b>SDI PROJECTION TO TD</b>									

<b>Company:</b>	US ROCKIES REGION PLANNING	<b>Local Co-ordinate Reference:</b>	Well NBU 1021-30D4BS
<b>Project:</b>	UTAH - UTM (feet), NAD27, Zone 12N	<b>TVD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Site:</b>	UINTAH_NBU 1021-30F PAD	<b>MD Reference:</b>	GL 5262' & KB 25 @ 5287.00ft (H&P 311)
<b>Well:</b>	NBU 1021-30D4BS	<b>North Reference:</b>	True
<b>Wellbore:</b>	NBU 1021-30D4BS	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	NBU 1021-30D4BS	<b>Database:</b>	EDM5000-RobertS-Local

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
197.00	197.00	-0.16	-0.28	First Weatherford Survey
2,129.00	2,045.44	347.63	-356.44	Last Weatherford Survey
2,204.00	2,112.22	371.39	-380.96	FIRST SDI MWD SURFACE SURVEY
9,997.00	9,851.42	1,129.49	-1,122.66	LAST SDI MWD SURFACE SURVEY
10,054.00	9,708.36	1,127.28	-1,121.43	SDI PROJECTION TO TD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_